ANNUAL REPORT

Provincial Board of Health

1921

Fortieth Annual Report

OF THE

Provincial Board of Health

OF

Ontario, Canada

FOR THE YEAR

1921

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
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To His Honour HENRY COCKSHUTT, ESQ.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I herewith beg to submit for your consideration the Fortieth Annual Report of the Provincial Board of Health for the year 1921.

Respectfully yours.

W. R. ROLLO,

Minister of Labour.

Toronto, April 20th, 1922.

To the Honorable WALTER R. ROLLO,

Minister of Labour.

SIR,—I have the honour to submit for your approval the Fortieth Annual Report of the Provincial Board of Health, made in conformity with and under the provisions of the Public Health Act, for the year 1921.

I have the honour to be, Sir,

Your obedient servant,

JOHN W. S. MCCULLOUGH,

Chief Officer of Health.

Toronto, April 20th, 1922.

ORGANIZATION

MINISTER OF LABOUR AND HEALTH,
THE HONORABLE WALTER R. ROLLO

The Provincial Board of Health

Adam H. Wright, B.A., M.D., M.R.C.S., Eng., *Chairman*	Toronto
Henry R. Casgrain, M.D., C.M.	Windsor
Thos. E. Kaiser, M.D., C.M.	Oshawa
W. H. Howey, M.D., C.M.	Sudbury
A. S. McElroy, M.D., C.M.	Ottawa
James Roberts, M.D., C.M., M.O.H.	Hamilton
John W. S. McCullough, M.D., C.M., D.P.H.	Toronto

Executive

John W. S. McCullough, M.D., C.M., D.P.H.	Chief Officer of Health
Robert W. Bell, M.D., C.M.	Provincial Inspector of Health

District Officers of Health

District:	No. 1.	Thos J. McNally, M.D., C.M., D.P.H.	London
	No. 2.	J. J. Fraser, M.D., D.S.O.	Toronto
	No. 3.	Daniel A. McClenahan, M.D., C.M., D.P.H.	Hamilton
	No. 4.	George Clinton, M.D., C.M.	Belleville
	No. 5.	Paul J. Moloney, M.D., C.M.	Ottawa
	No. 6.	W. Egerton George, M.D.	North Bay
	No. 7.	G. L. Sparks, M.D.	Fort William
	No. 8.	Hugh W. Johnston, M.D.	Sault Ste. Marie

Sanitary Inspectors

Alex. White   James Taylor   John Richardson   D. S. McKee   Wm. C. Millar

Division of Sanitary Engineering

F. A. Dallyn, C.E.	Provincial Sanitary Engineer
A. V. DeLaporte, B.A.Sc.	Chemist in Charge of Experimental Station
A. E. Berry, M.A.Sc.	Assistant Engineer

Division of Laboratories

H. M. Lancaster, B.A.Sc.	Director
Charles M. Anderson, M.D., C.M., C.P.H.	Bacteriologist
A. H. Bonham, B.A.Sc.	Chemist

Branches

Hibbert W. Hill, M.D., D.P.H., *Director*	London
James Miller, M.D., F.R.C.S. (Edin.), *Director*	Kingston
N. O. Thomas, B.A., M.B., *Director*	Fort William
N. F. W. Graham, M.B., *Director*	Saulte Ste. Marie
J. S. Douglas, M.B., *Director*	North Bay

Division of Venereal Diseases

R. R. McClenahan, B.A., M.B., D.P.H.	Director
B. L. Guyatt, M.B.	Clinical Specialist
J. W. Hunt, M.B., L.R.C.P., M.R.C.S.	Clinical Specialist
Edna L. Moore, A.R.R.C.	Director

Division of Industrial Hygiene

J. G. Cunningham, B.A., M.B., D.P.H.	Director
R. M. Hutton, B.A. (Oxon.)	Literary Research
N. C. Sharpe, B.A., M.B.	Clinical Specialist

Division of Public Health Education

J. J. Middleton, M.B. D.P.H.	Director

Division of Maternal and Child Welfare and Public Health Nursing

Mary Power, B.A.	Director
Beryl Knox	Associate Director
Marjorie Burgess, B.A.	Statistician
Wm. J. Bell, M.B.	Pediatrician

Division of Epidemiology

Consulting Staff

Public Health Administration	J. G. Fitzgerald, M.D., F.R.S.C.
Pediatrics	Alan Brown, B.A., M.B.
Obstetrics	B. P. Watson, M.D., F.R.C.S. (Edin.)

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ANNUAL REPORT

OF THE

Provincial Board of Health for the Province of Ontario

For the Year Ending the 31st of December, 1921

RESUMÉ OF THE TRANSACTIONS OF THE BOARD BY THE CHIEF OFFICER OF HEALTH.

This is the fortieth Annual Report of the Provincial Board of Health for the year ending 31st December, 1921.

During the year there were four meetings of the Board, at which all the members were present.

Legislation.

In the Session of 1921 the following public health legislation was passed:

2. Section 21 of The Public Health Act is repealed and the following section substituted therefor:—

> 21. The council of a township may, by by-law, provide for the payment to each member of the local board and to the secretary, of a sum not exceeding $4 for every attendance at meetings of the board and his necessary travelling expenses in going to and returning from such meetings.

3. Section 35 of The Public Health Act is amended by adding thereto the following subsections:—

> (3) The council of a city having a population of 100,000 or over may appoint an assistant medical officer of health, or more than one assistant medical officer of health, who shall act under the direction of the medical officer of health and, while so acting, shall have all the powers and perform the same duties as the medical officer of health.
>
> (4) The council of a township, with the approval of the Provincial Board of Health, may appoint for any stipulated time more than one medical officer of health for the township and may limit the territory within which each of such officers shall act, and every such medical officer of health shall, within the territory for which he is appointed, have and perform the powers and duties of a medical officer of health as set out in this Act or in any by-law passed thereunder and in force in the municipality.

4. Section 94 of the Public Health Act, as amended by section 47 of The Statute Law Amendment Act, 1914, and as further amended by section 10 of The Public Health Amendment Act, 1918, is further amended by adding thereto the following subsection:—

(16) Where a sewage disposal plant or any connection therewith is constructed by an urban municipality in a township, the council of the urban municipality and the council of the township may enter into an agreement for the connecting with and use of such sewage disposal plant or connections by the township municipality and residents thereof on such terms as may be mutually agreed upon.

Regulations.

The following Regulations were passed by the Board during the year. These Regulations were approved by Order-in-Council and published in *The Ontario Gazette* on the 19th day of May, 1921.

REGULATIONS FOR THE SANITARY CONTROL OF LUMBER AND TIMBER CAMPS SITUATED IN THE UNORGANIZED TERRITORY

EMPLOYERS TO NOTIFY PROVINCIAL BOARD OF HEALTH OF ESTABLISHMENT OF EACH CAMP FORTHWITH AND ANNUALLY.

SECTION 1.—Every employer of labour on any work of lumbering, wood cutting or cutting of timber for any purpose in any portion of the unorganized districts without municipal organization *shall,* upon the establishment of each and every camp, forthwith, notify the Provincial Board of Health of the establishment of the camp, and shall before the commencement of each season's work forward to the said Board replies to the following questions, viz.:

(1) List of proposed camps and location of each.
(2) Name of foreman in each camp.
(3) Means of access to each camp.

[illegible] TYPE OF TENT CAMP

(4) Average number of men in each camp.
(5) Name and residence of physician contracted with and whether located in camp or not.
(6) Date of contract and its duration.

(7) Whether contract is under section 2 only, or under 2 and 3. If the latter the employer shall state the amount of fee paid for sanitary supervision as well as amount deducted from each man's pay monthly for physician's fee covering medical service.

(8) Whether a permanent hospital is provided in camp or in the district.

ALL EMPLOYERS TO CONTRACT WITH PHYSICIANS FOR SANITARY SUPERVISION, MONTHLY INSPECTION AND REPORT UPON CAMPS.

SECTION 2.—Every employer of labour, for any work referred to in the preceding section, shall contract with a legally qualified physician for the sanitary supervision and inspection of all camps, works or premises under his control. The contract shall provide for inspection at least once a month or as often as required by the Provincial Board, and shall state plainly the amount of fee or remuneration to be paid by the employer to the physician. The physician under contract shall forthwith report in writing to the Provincial Board the result of his inspection. The report shall include (1) the type or plan of camp in use whether of Class "A," "B," or "C" or a combination of these as set out in these Regulations. (2) A description of the location or site with the distance clearly indicated between the camp and any adjacent water such as a river, stream or lake, (3) the condition of the various buildings in the camp, (4) the water supply and drainage, (5) a plan of the camp showing relation of any adjacent water.

In case of dispute between the physician and the company as to the fee herein referred to the amount of fee shall be settled by the Provincial Board, whose decision shall be final.

LUMBERMEN MAY CONTRACT WITH PHYSICIANS FOR MEDICAL AND SURGICAL CARE OF EMPLOYEES; THEY MAY DEDUCT FROM WAGES OF EMPLOYEES A SUM NOT EXCEEDING $1 PER MONTH.

SECTION 3.—Every employer of labour in a lumber camp or works, as set out in section 1, may contract with one or more legally qualified physicians for the medical and surgical care of his employees and for the payment of such services may deduct from the pay due any employee a sum not exceeding $1 per month. This sum shall be paid to the physician or physicians so contracted with, without rebate or deduction. Every such physician shall supply medical attendance and medicine to the employees. Every employer *who does not so contract* for medical and surgical services shall be responsible for the medical and hospital care as well as for the maintenance of each and every employee taken ill while in his employ. He shall incur a like responsibility for each and every case of sickness which develops in an employee after quitting his service, or after being discharged from his employ when, in the opinion of the Provincial Board, the origin of such sickness is traceable to the period of such employment, or to an accident to an employee occurring while in his employ, when the sick or injured person is unable to pay, or does not pay, for the same. The apportionment and adjustment of the payment of expenses so incurred shall be determined in accordance with section 118, subsection 3 of the Public Health Act.

COPY OF CONTRACT TO BE FORWARDED TO PROVINCIAL BOARD, WHICH FOR REASONS MAY REQUIRE CHANGES IN MANNER HEREIN SET FORTH.

Section 4.—Every employer of labour on all works in the unorganized districts without municipal organization, as set out in preceding sections shall transmit to the Provincial Board before beginning work in camps or premises, copies of contract covering the sanitary supervision of all camps, works or premises, as well as copy of agreement for medical and surgical care of employees as set forth in section 3. These contracts and agreements must be signed by both contracting parties, duly witnessed. Notice of any subsequent change of physician or terms of contract must be filed with the Provincial Board within one month after such change has been effected.

Should it appear to the Provincial Board that owing to the distance of the residence of the physician employed from the camps the best interests of the employees are not likely to be served, it shall be competent for the said Board with the approval of the Minister to require the employer of labour to contract with some physician residing at or near the works of the company. Should it at any time appear, owing to the distance of physician from the camps, or to neglect or other cause on the part of the company or physician employed, that an employee has been put to expense to secure medical assistance for sickness or accident other than employer's physician, the employer and physician shall be held responsible for the payment of a reasonable fee for such services. The amount to be paid in such instances shall be determined as provided by section 118, subsection 3, of the Public Health Act.

OWNER, MANAGER, ETC., RESPONSIBLE FOR CARRYING OUT OF REGULATIONS AND HEALTH ACT.

Section 5.—Every employer of labour under these Regulations shall be held to mean the Owner, Manager, Agent, Contractor, Subcontractor or Foreman of any Lumbering Camp, Wood-cutting Camp or concern engaged in the manufacturing of wood products and located in any portion of the unorganized districts without municipal organization, and shall be responsible for the enforcement of every regulation herein contained, and of any section of the Public Health Act governing in any case or circumstances.

THE SAME MEASURES TAKEN BY LOCAL HEALTH AUTHORITIES TO BE ADOPTED BY EMPLOYERS, AGENTS, ETC., IN THE CASE OF COMMUNICABLE DISEASES.

Section 6.—Every measure required to be taken by a Local Board of Health or Medical Officer of Health, Sanitary Inspector or other Health Officer under the Public Health Act, or under any Regulation made by the authority of the Act in any organized municipality must be taken by the employer and the employees or agents and by the physician employed by them whenever any insanitary condition or any communicable disease or suspected communicable disease referred to in the said Public Health Act or Regulations is found in any camp or premises, to which these Regulations apply. The said employer, manager, foreman, agent or physician employed shall be subject to the same penalties as any of the aforesaid Health Officers.

PROVINCIAL BOARD TO BE NOTIFIED FORTHWITH OF EACH AND EVERY CASE OF COMMUNICABLE DISEASE.

Section 7.—Should any communicable disease or suspected communicable disease as defined by the Public Health Act or Regulations break out in any camp, works or premises, the employer or his employees or agent in charge shall immediately send *notice to the physician employed,* who shall at once notify the Provincial Board of the outbreak, and take the necessary steps to control the disease.

In all respects the employer, his employees or agent in charge of any camp, works or premises, shall be held to be in the same position as regards the occurrence of communicable disease therein as a householder, and shall conform to Public Health Act and Regulations in respect to such communicable disease.

EMPLOYEES IN CAMPS TO FURNISH CERTIFICATE OF VACCINATION UPON REQUEST OF PROVINCIAL OFFICER.

SECTION 8.—Every employee in a lumbering or other camp shall, when requested to do so by the Provincial Board of Health, furnish the foreman or other person in charge of the camp with a certificate of successful vaccination or re-vaccination within the immediate preceding seven years. The said Board, by its inspector or officer, shall forthwith quarantine such camps or works until such certificate has been furnished by each and every employee in the said camp or camps.

TWO CLASSES OF HOSPITALS MUST BE PROVIDED BY ALL EMPLOYERS.

SECTION 9.—Every employer in a camp shall provide the following classes of hospitals, viz.:

(1) An Isolation Hospital consisting of a building or a tent as may be approved by the Provincial Board.

(2) A general hospital for sick or injured employees, of a type approved by the Provincial Board.

SITE OF CAMP, BUILDINGS, ETC., TO BE APPROVED BY THE PROVINCIAL BOARD.

SECTION 10.—The location of a camp, works or premises shall be made with due regard to its healthfulness, and no camp shall be located or erected nearer than 100 feet to any lake, stream, or other water, except with the written consent of the Provincial Board of Health.

PROVISIONS AS TO AIR SPACE, LIGHTING, ETC.

SECTION 11.—Every camp occupied by employees shall contain 400 cubic feet of air space for every occupant thereof and shall further be provided with sufficient ventilation as set forth and described in specifications to be found in section 18 of these Regulations.

METHOD OF VENTILATION TO BE APPROVED.

SECTION 12.—The method of ventilation shall be as indicated in the plans and specifications hereinafter set out.

COLLECTION OF GARBAGE, MANURE AND NIGHT SOIL.

SECTION 13.—When metal garbage receptacles are not available, a sloop or jumper with a covered box may be used for the collection and removal of manure and night soil. These shall be collected and conveyed daily to a suitable place of disposal and there buried or burnt.

DISTANCE AND DIRECTION OF STABLES FROM COOK-HOUSE AND SLEEP CAMPS.

SECTION 14.—The stables in connection with a camp or works must be so located as not to contaminate the water supply or drain to any water. They shall conform to the distance set forth in the plans A, B, C, or combination. This distance may be increased if thought necessary by the Inspector or Officer of the Provincial Board. All stable manure shall be collected in the manner provided in section 13, and may be disposed of by burning or by spreading out upon the land in a thin covering at a reasonable distance from buildings or water supply to the satisfaction of the Board.

PRINTED COPIES OF REGULATIONS TO BE FORWARDED BY BOARD AND KEPT ON FILE IN OFFICE.

SECTION 15.—Copies of these Regulations shall be furnished every employer of labour by the Provincial Board upon request, and a copy shall be kept on file in the office of each clerk of the works for the use of the employees.

BOARD MAY ENFORCE REGULATIONS AT EXPENSE OF EMPLOYER.

SECTION 16.—Should the Provincial Board on complaint or otherwise find that any of these Regulations are not compiled with, the Board or its Inspector shall, when necessary, take steps to enforce these Regulations. The expense of such inspection and enforcement shall be paid by the employer or his agent responsible for the violation of the Regulations as provided under section 118, subsection 3, of the Public Health Act.

THE SANITARY SUPERVISOR (TENURE OF OFFICE).

SECTION 17.—After a contract is made between an employer and a physician, as provided for in section 2 of these Regulations, the physician may not be dismissed by the employer without the approval of the Provincial Board. Should it appear to the Board that the physician is not fulfilling his contract, the contract may be cancelled by the Board and the employer required to make a new contract with some other legally qualified physician.

SPECIFICATIONS, DETAILS AND PLANS OF CAMP CONSTRUCTION.

SECTION 18.—Every employer of labour on any of the works referred to in the preceding sections shall, in every camp constructed or renewed after July 1st, 1921, conform to one or other of the classes of standard camps and specifications governing the same and which are hereinafter set forth. All camps and works which may then be in existence and which, in the opinion of the Provincial Board, could be used for a further period may be permitted to operate, provided the same comply reasonably with the Regulations approved by the Lieutenant-Governor in Council on the 10th day of August, 1912, but no camp constructed under the latter Regulations shall be permitted to be used after January 1st, 1923.

STANDARD CAMPS.

The plans of Standard Camps included in these Regulations and referred to as Classes "A," "B" and "C" and combination shall be a part of these Regulations.

CLASS "A" CAPACITY 100 MEN.

Material and Construction.—The buildings may be constructed of logs or of lumber. If of the former, the spaces between logs must be flushed up with mortar (chinking with moss will not be permitted).

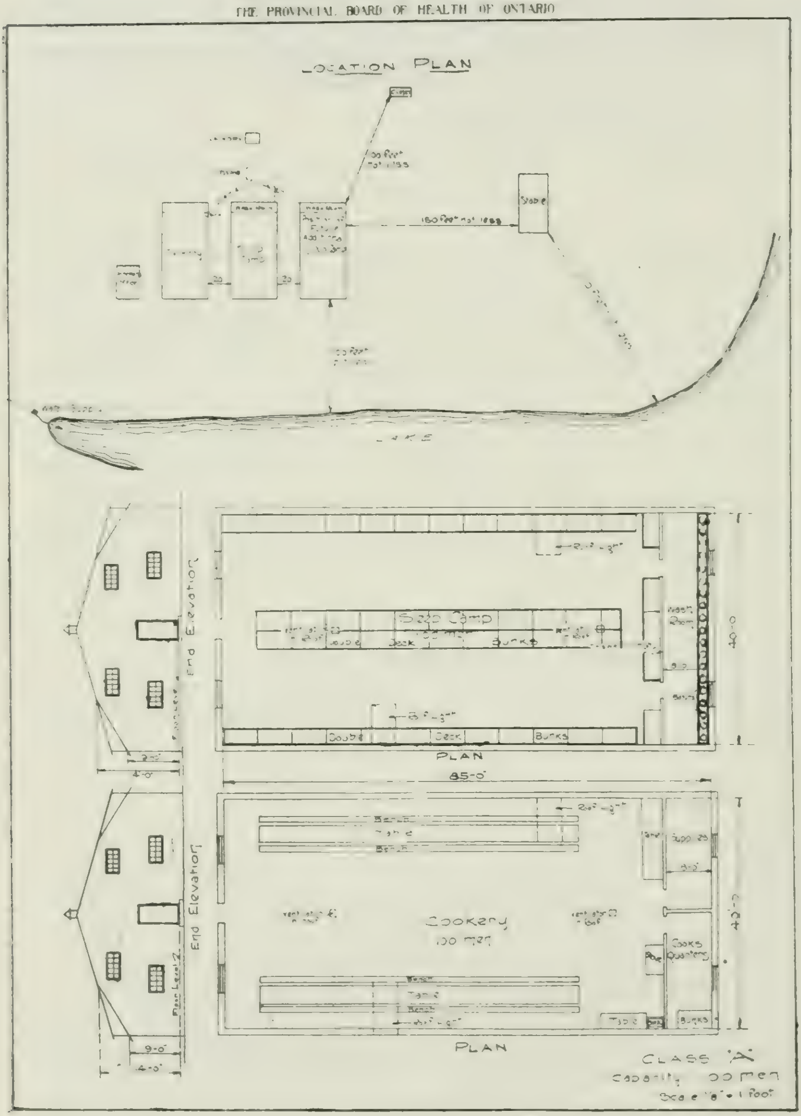
Roofs and Floors.—All roofs and floors are to be constructed of tight lumber (poles of any kind will not be permitted).

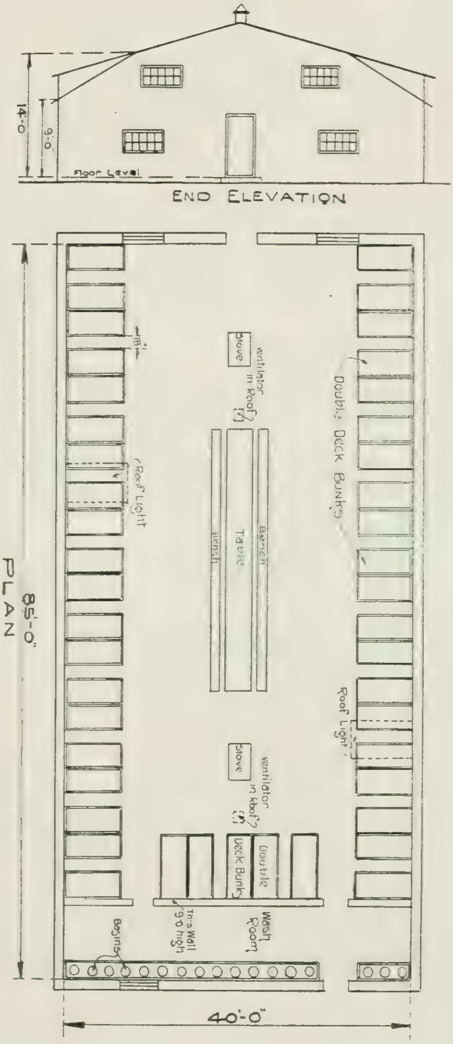
Window Lighting.—There shall be ten windows; four are to be placed in each gable as per plan. Each of these windows shall contain at least nine square feet of glass, and in addition two dormer windows shall be placed in the roof in position as set forth in the plan. Each of these roof windows shall contain at least ten square feet of glass. All roof windows shall be hinged or hung on pivots with a pull cord attached in order that they may be readily opened and closed.

Ventilation.—There shall be three roof ventilators placed as shown in the plan. These shall have openings of at least twelve inches square and shall be equipped so that they may be opened and closed by a pull-cord. Fresh air inlets are to be constructed as shown in the plan. The fresh air inlets shall be protected at each end by a wire screen and shall not be less than six inches by six inches.

Bunks and Bedding.—The bunks shall be single double-deck bunks. These may be constructed of iron or of wood, but must be arranged in position as shown in plan "A" or plan "E." The former provides bunks parallel with the walls and the latter at right angles to the walls. Should the plan at right angles to the walls be preferred, a passage-way of at least eighteen inches shall be provided between each pair of bunks. Each pair shall be further divided by a partition of at least eighteen inches in height from the top of the bunk to prevent contact between occupants.

THE PROVINCIAL BOARD OF HEALTH OF ONTARIO





BUNK HOUSE
CLASS "E"
SHOWING ALTERNATE BUNKING
ARRANGEMENT
Scale 1/8" = 1 foot

THE PROVINCIAL BOARD OF HEALTH OF ONTARIO

Ticks or mattresses and clean blankets shall be furnished to each employee when entering camp.

White-washing Interiors.—All camps and buildings after having been in use for *one season* shall be treated with a coat of lime-wash at the beginning of each season.

Storage and Cooks' Quarters.—A section of the cookery building shall be partitioned off, and subdivided, to provide quarters for the cooks' staff. A room for the storing of perishable foodstuffs shall be provided. The requisite number of sinks and table accommodation, as shown in the plan, shall be provided. Doors shall be hung at entrance to the cooks' quarters and the store-room.

Wash-room and Bunkhouse.—A wash-room with the number of basins, as shown in the plan, shall be provided. Doors shall be hung at the entrance as in the case of the cook's quarters.

Laundry.—If a public laundry, satisfactory to the Provincial Board, is not available, a laundry building is to be provided as shown in the plan. The laundry shall contain a built-in or iron boiler, together with laundry tubs as shown in the plan. Windows are also to be constructed as shown.

Drainage.—Drainage from all sinks and wash basins shall be conveyed to a covered cesspool as shown, said cesspool to be located at least fifty feet from any building or at a greater distance if required by the Provincial Board.

Closets.—Closets are to be provided as shown. These are to conform to the standard plan save that it may be optional whether an open or closed seat is used. Closets used in connection with summer camps shall be made fly-proof.

This camp is designed to meet the requirements of lumbermen desiring to use camps three years or over, and is also suitable as a depot or headquarters camp. Although designed to house 100 men, it is optional with the builder whether he house the total in one camp as shown, or prefers to construct two camps as shown on plan " B." The Half Mansard Roof shown provides a greater cubic air space than the ordinary pitch roof.

Class " B." Capacity 50 Men.—This camp is similar to Class " A " except that the roof is of the straight or pitch type, and that only three windows are provided in the gable ends instead of four.

The same features respecting laundry closets and ventilation are required for this camp as for Camp "A."

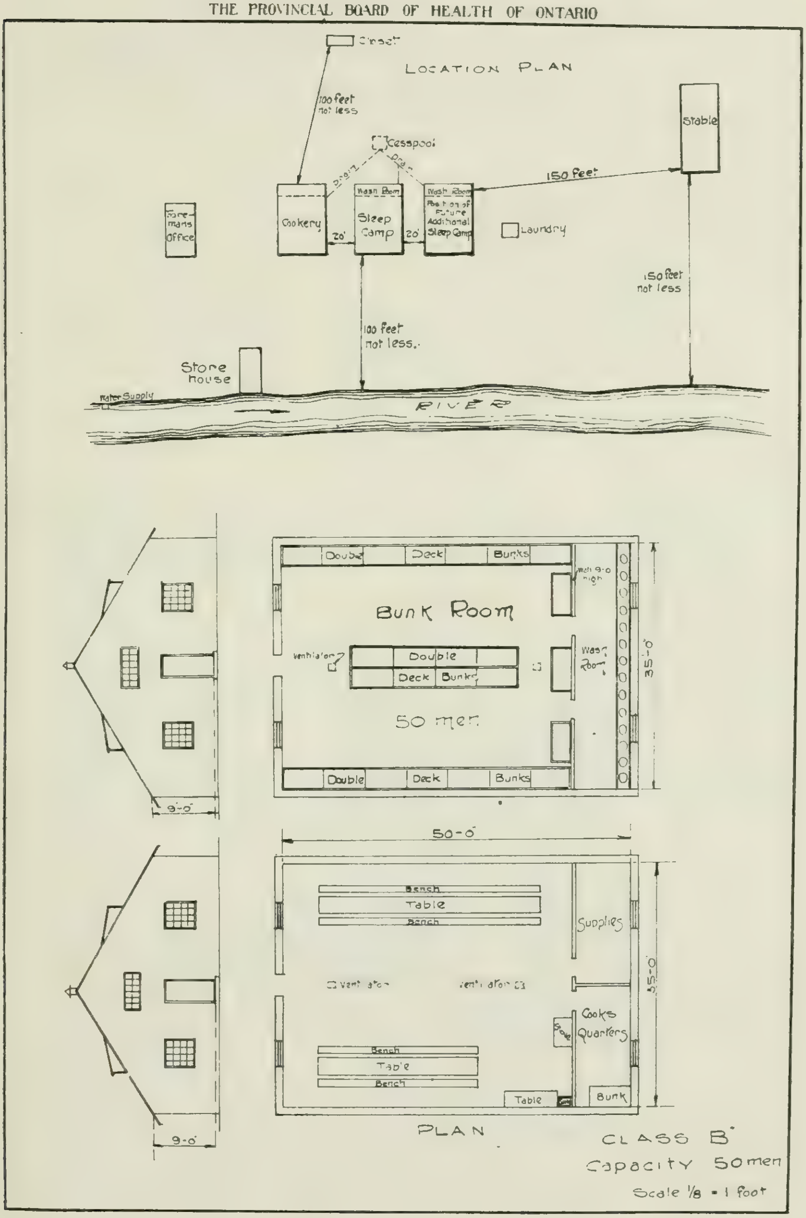
The principal reason for this design it to cater to concerns who prefer to house 100 men in two buildings rather than in one large camp, such as shown in Class "A." The specifications attached to plan "A" shall be used in connection therewith.

Class " C," Capacity 26 Men.—The camp shown in plan " C " has been designed to house twenty-six men. In every respect this building is similar to those shown on plan " B " save that no laundry is provided. The specifications accompanying plan "A" shall apply to this class of camp.

Drainage.—All waste water from sinks or basins is to be conveyed to covered cesspool, as set out in specification covering plan "A."

Closets.—All closets are to conform to specifications set out and covering plan "A."

THE PROVINCIAL BOARD OF HEALTH OF ONTARIO



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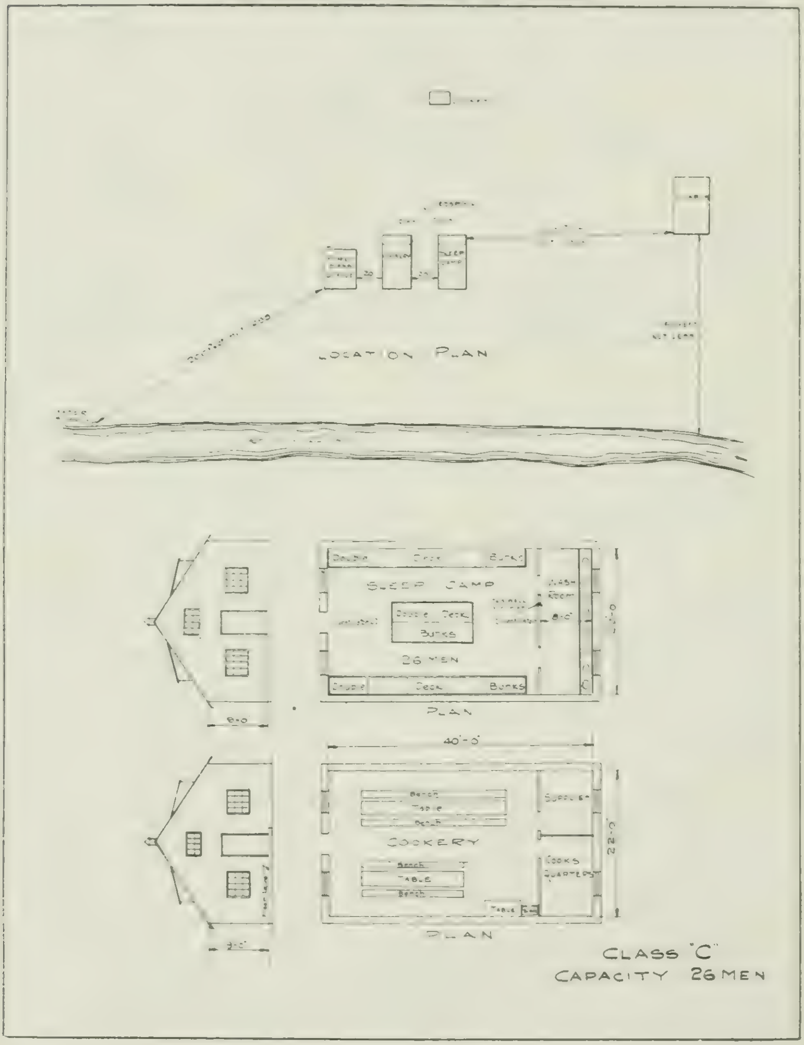

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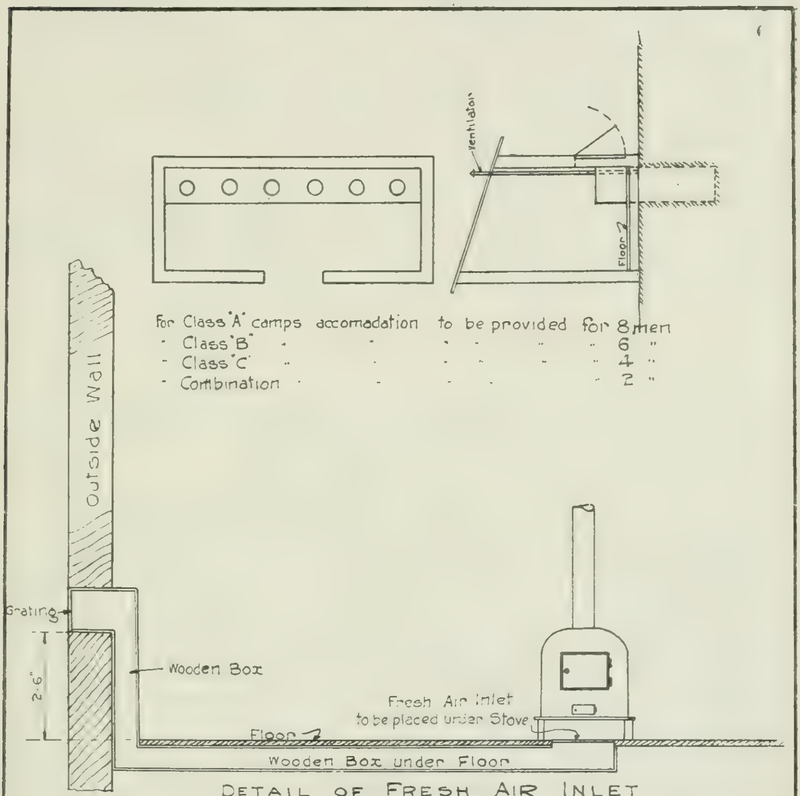
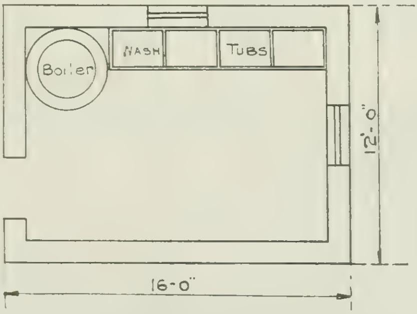


For Class "A" camps accomodation to be provided for	8 men
" Class "B" " " " "	6 "
" Class "C" " " " "	4 "
" Combination " " " "	2 "

DETAIL OF FRESH AIR INLET
Scale 1/2" = 1 foot



LAUNDRY
Scale 1/4" = 1 foot

Combination Camp.—This camp has been designed to meet the requirements of Pulp and Paper Companies, who as a rule contract out small blocks of timber to jobbers. The jobbers operate for the most part with crews of from eight to fifteen men, with an average of ten. This class of jobber has in the past invariably brought his wife and family to the woods and has constructed small camps far below the average logging camp. In fact the buildings constructed by these jobbers have in the past been of the most unsanitary type: hence the necessity for the creation of a small standard building combining the best sanitary principles at the minimum cost.

The number of men housed in this type of camp must not exceed fifteen. Should the operator require a larger crew, then one of the other types or classes of camp shall be used. The idea intended to be conveyed by this small camp, constructed under one roof is for the purpose of offering a small structure embodying most of the features to be found in the larger and more expensive camps at a minimum.

MATERIAL AND CONSTRUCTION.

The building may be constructed of logs or of lumber. If of the former, the spaces between logs must be plastered or flushed up with mortar. (Chinking with moss is prohibited.)

Roofs and Floors.—All floors and roofs are to be constructed of tight lumber. (Poles of any kind will not be permitted.)

Window Lighting.—There shall be eight windows, three are to be placed in each gable as per plan; each of these windows shall contain at least nine square feet of glass, and in addition two dormer windows be placed in the roof, as set forth in the plan. Each roof window shall contain at least ten square feet of glass. All roof windows shall be hinged or hung on joints with a pull-cord attached in order that they may be readily opened or closed.

Ventilation.—There shall be two roof ventilators placed as shown. These shall have openings of at least six inches square, equipped so that they may be opened and closed by a pull-cord. Fresh air inlets are to be constructed as shown in plan. The fresh air inlet shall be protected at each end by a wire screen and shall not be less than six inches by six inches.

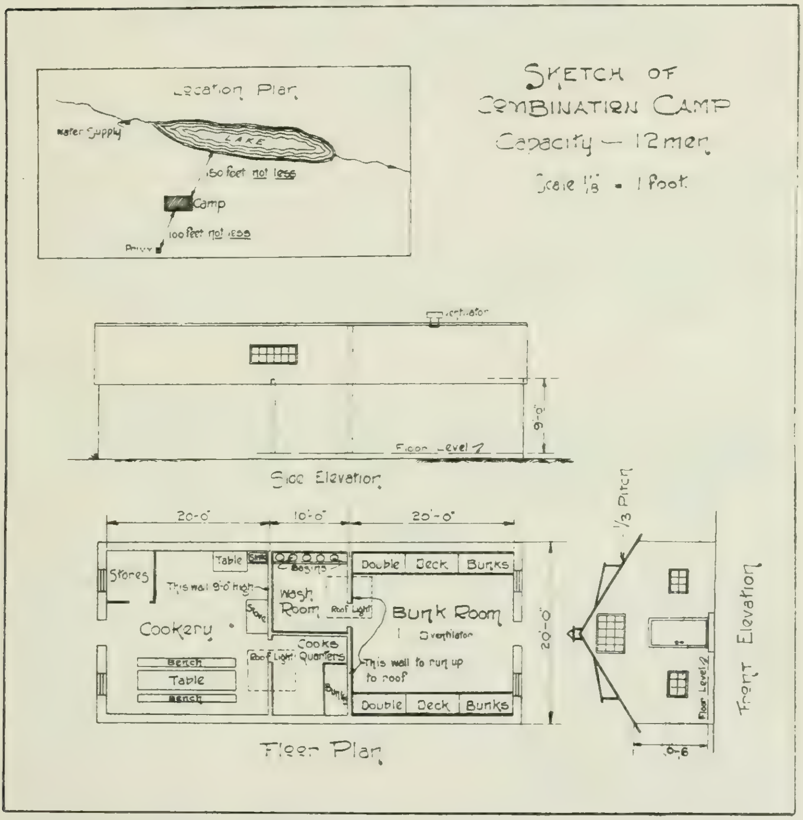
Bunks and Bedding.—The bunks shall be single double-deck bunks. These may be constructed of iron or of wood, but must be arranged in position as shown on Plan "A" or Plan "B." The former provides bunks parallel with the walls and the latter at right angles to the walls. Should the plan at right angles to the walls be preferred a passage way of at least eighteen inches shall be provided between each pair of bunks. Each pair shall be further divided by a partition of at least eighteen inches in height from the top of the bunk to prevent contact between occupants. Ticks or mattresses and clean blankets shall be furnished each employee when entering camp.

White-washing Interiors.—All camps or buildings after being used one season shall be treated with a coat of lime-wash at the beginning of each season.

Cooks' Quarters and Storage Room.—Provision is made for cooks' quarters and the storing of perishable foodstuffs. A door is to be hung at the entrance to cooks' quarters.

Bunk House Wash-Room.—A wash-room with the number of basins as shown in the plan shall be provided.

THE PROVINCIAL BOARD OF HEALTH OF ONTARIO



SECTION 19.—No modification of these regulations shall be permitted unless such modification is approved by the Provincial Board.

PENALTIES.

SECTION 20.—Any person, firm or corporation who contravenes any of the provisions of these Regulations or who wilfully disobeys or neglects to carry out any order or directions lawfully given by the Provincial Board or any Officer thereof, shall incur a penalty of not less than $5 nor more than $500, as provided by section 110, subsection 2 of the Public Health Act.

SECTION 21.—All former Regulations for the sanitary control of lumber or timber camps in unorganized territory are hereby repealed.

REGULATIONS FOR THE SANITARY CONTROL OF MINING CAMPS, SAW MILLS AND OTHER INDUSTRIES SITUATED IN THE UNORGANIZED TERRITORY

EMPLOYERS TO NOTIFY PROVINCIAL BOARD OF HEALTH OF ESTABLISHMENT OF EACH CAMP OR WORKS FORTHWITH AND ANNUALLY.

SECTION 1.—Every employer of labour in any work (other than a lumber camp) situated in any portion of the unorganized districts without municipal organization, *shall,* upon the establishment of each and every camp or works, forthwith notify the Provincial Board of Health of the establishment of the same, and annually thereafter, upon a date to be fixed, give such particulars as may be required by the said Board.

ALL EMPLOYERS TO CONTRACT WITH PHYSICIANS FOR SANITARY SUPERVISION AND MONTHLY INSPECTION, AND REPORT UPON ALL CAMPS AND WORKS.

SECTION 2.—Every employer of labour referred to in the preceding section, shall contract with a legally qualified physician for the sanitary supervision and inspection of all camps, works or premises under his control. The contract shall provide for inspection at least once a month or as often as required by the Provincial Board, and shall state plainly the amount of fee or remuneration to be paid by the employer to the physician.

The physician under contract shall forthwith report in writing to the Provincial Board the result of his inspection. The report shall include:

(1) The type or plan of a camp in use with the sizes of buildings plainly indicated.

(2) A description of the location or site with the distance clearly indicated between the camp and any adjacent water, such as a river, stream or lake.

(3) The condition of the various buildings in the camp.

(4) The water supply and drainage.

(5) A plan of the camp showing relation of any adjacent water.

In case of dispute between the physician and the company as to the fee herein referred to the amount of fee shall be settled by the Provincial Board, whose decision shall be final.

EMPLOYERS TO CONTRACT WITH PHYSICIAN FOR MEDICAL AND SURGICAL CARE OF EMPLOYEES: THEY MAY DEDUCT FROM WAGES A SUM NOT EXCEEDING $1 PER MONTH.

Section 3.—Every employer of labour, as set out in section 1, shall contract with one or more legally qualified physicians for the medical and surgical care of his employees, and for the payment of such services may deduct from the pay due any employee, a sum not exceeding $1 per month. This sum shall be paid to the physician or physicians so contracted with, *without rebate or deduction.* Every such physician shall supply medical and surgical attendance and medicine to the employees.

COPY OF CONTRACT TO BE FORWARDED TO PROVINCIAL BOARD, WHICH FOR REASONS MAY REQUIRE CHANGES IN MANNER HEREIN SET FORTH.

Section 4.—Every employer of labour on all works in the unorganized districts without municipal organization, as set out in preceding sections, shall transmit to the Provincial Board before beginning work in camps or premises, two copies of contract covering the sanitary supervision of all camps, works or premises, as well as copy of agreement for medical and surgical care of employees, as set forth in section 3. These contracts and agreements must be signed by both contracting parties, duly witnessed. Notice of any subsequent change of physician or terms of contract must be filed with the Provincial Board within one month after such change has been effected.

Should it appear to the Provincial Board that owing to the distance of the residence of the physician employed from the camps, the best interests of the employees are not likely to be served, it shall be competent for the said Board with the approval of the Minister, to require the employer of labour to contract with some physician residing at or near the works of the company. Should it at any time appear, owing to the distance of physician from the camps, or to neglect or other cause on the part of the company or physician employed, that an employee has been put to expense to secure medical assistance for sickness or accident other than employer's physician, the employer and physician shall be held responsible for the payment of a reasonable fee for such services. The amount to be paid in such instances shall be determined as provided by section 118, subsection 3 of the Public Health Act.

OWNER, MANAGER, ETC., RESPONSIBLE FOR CARRYING OUT OF REGULATIONS AND HEALTH ACT.

SECTION 5.—Every employer of labour under these regulations shall be held to mean the owner, manager, agent, contractor, subcontractor or foreman of any mining camp, sawmill or other industry located in any portion of the unorganized districts without municipal organization, and shall be responsible for the enforcement of every regulation herein contained, and of any section of the Public Health Act governing in any case or circumstance.

THE SAME MEASURES TAKEN BY LOCAL HEALTH AUTHORITIES TO BE ADOPTED BY EMPLOYERS, AGENTS, ETC., IN THE CASE OF COMMUNICABLE DISEASES.

SECTION 6.—Every measure required to be taken by a local board of health or medical officer of health, sanitary inspector or other health officer under the Public Health Act, or under any Regulation made by the authority of the Act in any organized municipality must be taken by the employer and the employees or agents and by the physician employed by them whenever any insanitary condition, communicable disease or suspected communicable disease referred to in the said Public Health Act or Regulations is found in any camp or premises, to which these Regulations apply. The said employer, manager, foreman, agent or physician employed shall be subject to the same penalties as any of the aforesaid health officers.

PROVINCIAL BOARD TO BE NOTIFIED FORTHWITH OF EACH AND EVERY CASE OF COMMUNICABLE DISEASE.

SECTION 7.—Should any communicable disease or suspected communicable disease as defined by the Public Health Act or Regulations break out in any camp, works, or premises, the employer or his employees or agent in charge shall immediately send notice to the physician employed, who shall at once notify the Provincial Board of the outbreak and take the necessary steps to control the disease.

In all respects the employer, his employees or agent in charge of any camp, works or premises, shall be held to be in the same position as regards the occurrence of communicable disease therein as a householder, and shall conform to the Public Health Act and Regulations in respect to such communicable disease.

EMPLOYEES IN CAMPS TO FURNISH CERTIFICATE OF VACCINATION UPON REQUEST OF PROVINCIAL OFFICER.

Section 8.—Every employee in any mining camp, sawmill or other industry, shall, when requested to do so by the Provincial Board of Health, furnish the foreman or other person in charge of the camp with a certificate of successful vaccination or re-vaccination within the immediate preceding seven years. The said Board by its inspector or officer shall forthwith quarantine such camps or works until such certificate has been furnished by each and every employee in the said camp or camps.

TWO CLASSES OF HOSPITALS MUST BE PROVIDED BY ALL EMPLOYERS.

Section 9.—Every employer in a camp shall provide the following classes of hospitals, viz.:

(1) An isolation hospital consisting of a building or a tent as may be approved by the Provincial Board.

(2) A general hospital for sick or injured employees. of a type approved by the Provincial Board.

SITE OF CAMP, BUILDINGS, ETC., TO BE APPROVED BY THE PROVINCIAL BOARD.

Section 10.—The location of a camp, works or premises shall be made with due regard to its healthfulness, and no camp shall be located or erected nearer than 100 feet to any lake, stream or other water except with the written consent of the Provincial Board of Health.

PROVISIONS AS TO AIR SPACE. LIGHTING. ETC.

Section 11.—Every camp occupied by employees shall contain four hundred (400) cubic feet of air space for every occupant thereof. The floor shall be constructed of boards or of planks or other material equally suitable for the purpose of every such camp, other than a temporary tent, not exceeding in size ten feet by fifteen feet, shall be supplied with adequate lighting. In all wooden or iron structures, the windows must be constructed so that they may be opened when necessary.

METHOD OF VENTILATING TO BE APPROVED.

SECTION 12.—The method of ventilation of any camp or premises in which a stove or furnace is used shall be such as will satisfy the Inspector or Officer of the Provincial Board. The temperature of the room should be maintained at from 60 to 65 deg. Fahr.; a shallow pan supplied with water shall be kept on the stove or furnace to supply air moisture.

WASH-HOUSE, LAUNDRY AND BATH.

SECTION 13.—Every camp, works or premises coming under these Regulations shall be equipped with a separate building, to be used as a wash-house or laundry, and attached thereto, a room or, if preferred, a separate building, equipped with a stove and tubs for bath purposes. Such building or bath-house shall be satisfactory to the Provincial Board.

SEPARATE KITCHEN WITH DINING ROOM TO BE PROVIDED.

SECTION 14.—Every camp, works or premises shall be supplied with a building or tent properly constructed and equipped, and set apart as a kitchen or cook-house, and having a dining-room or eating-room in connection therewith, with proper conveniences for the cleanliness and comfort of the employees, and shall be satisfactory to the Provincial Board.

REFUSE TO BE COLLECTED AND REMOVED IN BUCKETS.

SECTION 15.—Proper sanitary buckets shall be provided into which all refuse, whether liquid or solid, shall be placed; these, when full, must regularly be removed to a safe distance from the kitchen and be so disposed of as not to create a nuisance or contaminate the drinking water. A properly constructed drainage system, satisfactory to the Provincial Board may be utilized in lieu of slop buckets.

LATRINES OR EARTH CLOSETS TO BE KEPT CLEAN.

SECTION 16.—When regular water-flushed closets are not provided, latrines, earth or other closets are to be used. These are to be located, constructed and kept in a sanitary manner, and they must also be made fly-tight, to the satisfaction of the Provincial Board and the medical officer of the camps.

DISTANCE AND DIRECTION OF STABLES FROM COOK-HOUSE AND SLEEP CAMP.

SECTION 17.—The stables in connection with every camp works or premises must be so located as not to contaminate the water supply or drain to any water. They shall be situated at least 150 feet distant from the cook-house and men's sleeping quarters and a like distance from the river, stream or other waters upon which the camp may be situated. All stable manure shall be collected in a sloop or jumper and hauled to point of disposal daily.

Manure may be disposed of by burning or by spreading out upon the land in a thin covering at a reasonable distance from buildings or water supply to the satisfaction of the Provincial Board.

IN MINES OF 100 FEET IN DEPTH, PORTABLE PRIVIES ARE REQUIRED.

SECTION 18.—In mines of a depth of 100 feet or over, or with drifts of 300 feet or over, portable closets satisfactory to the Provincial Board, for the use of the employees, shall be provided.

PRINTED COPIES OF REGULATIONS TO BE FORWARDED BY BOARD AND KEPT ON FILE IN OFFICE.

SECTION 19.—Copies of these Regulations shall be furnished every employer of labour by the Provincial Board upon request, and a copy shall be kept on file in the office of each clerk of the works for the use of the employees.

BOARD MAY ENFORCE REGULATIONS AT EXPENSE OF EMPLOYER.

SECTION 20.—Should the Provincial Board on complaint or otherwise find that any of these Regulations is not complied with, the Board or its Inspector shall, when necessary, take steps to enforce these Regulations. The expense of such inspection and enforcement shall be paid by the employer or his agent responsible for the violation of the Regulations, as provided under section 118, subsection 3 of the Public Health Act.

THE SANITARY SUPERVISOR (TENURE OF OFFICE).

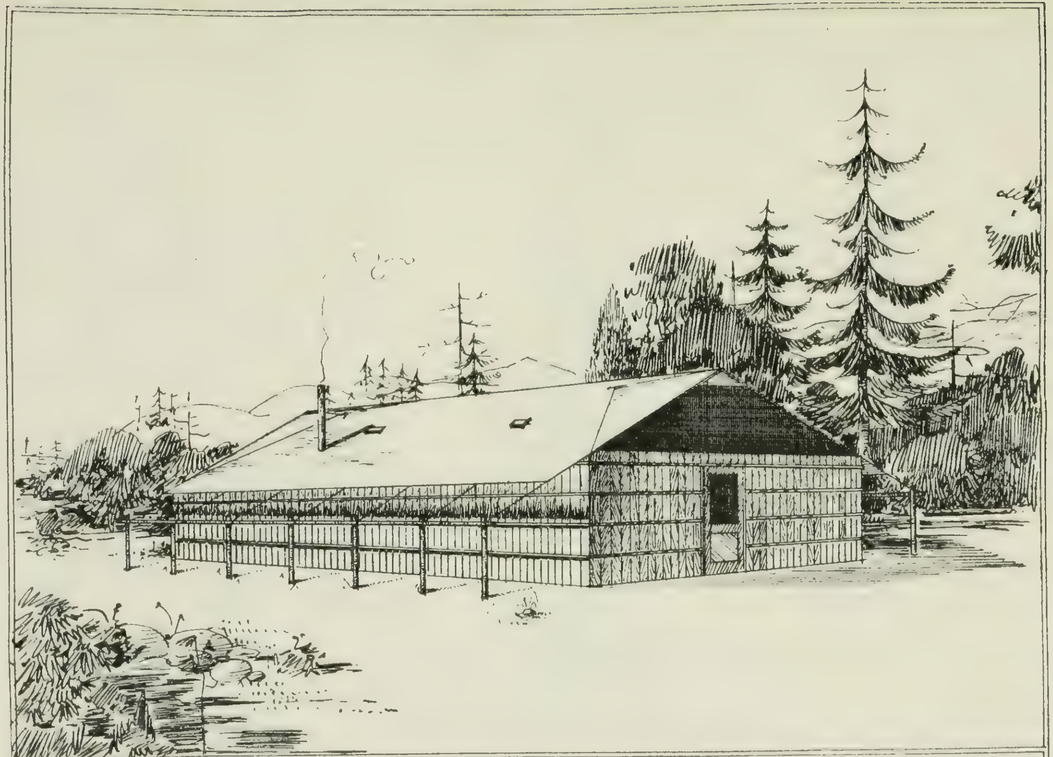
SECTION 21.—After a contract is made between an employer and a physician, as provided for in sections 2 and 3 of these Regulations, the physician may not be dismissed by the employer without the approval of the Provincial Board. Should it appear to the Board that the physician is not fulfilling his contract, the contract may be cancelled by the Board and the employer required to make a new contract with some other legally qualified physician.

SECTION 22.—No modification of these Regulations shall be permitted unless such modification is approved by the Provincial Board.

PENALTIES.

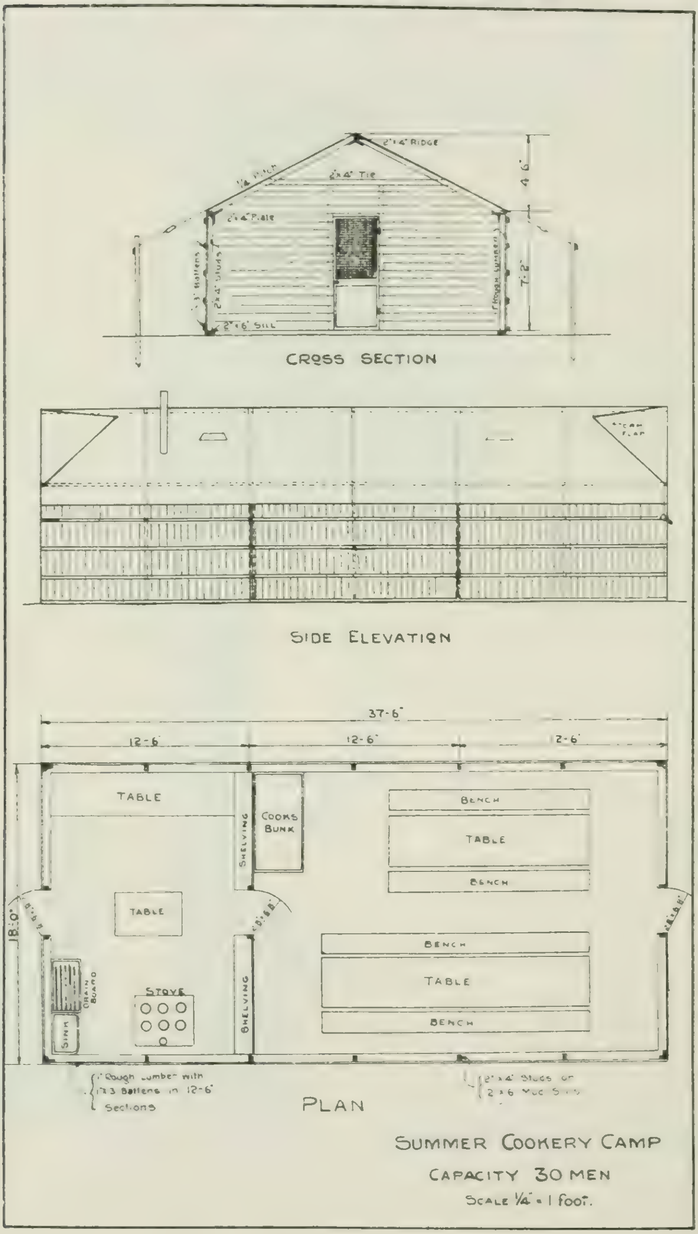
SECTION 23.—Any person, firm or corporation who contravenes any of the provisions of these Regulations or who wilfully disobeys or neglects to carry out any order or direction lawfully given by the Provincial Board or any officer thereof, shall incur a penalty of not less than $5 nor more than $500 as provided by section 110, sub-section 2, of the Public Health Act.

SECTION 24.—All former Regulations for the sanitary control of mining camps, sawmills and other industries situated in unorganized territory are hereby repealed.



KNOCKDOWN TYPE OF TENT CAMP

THE PROVINCIAL BOARD OF HEALTH OF ONTARIO

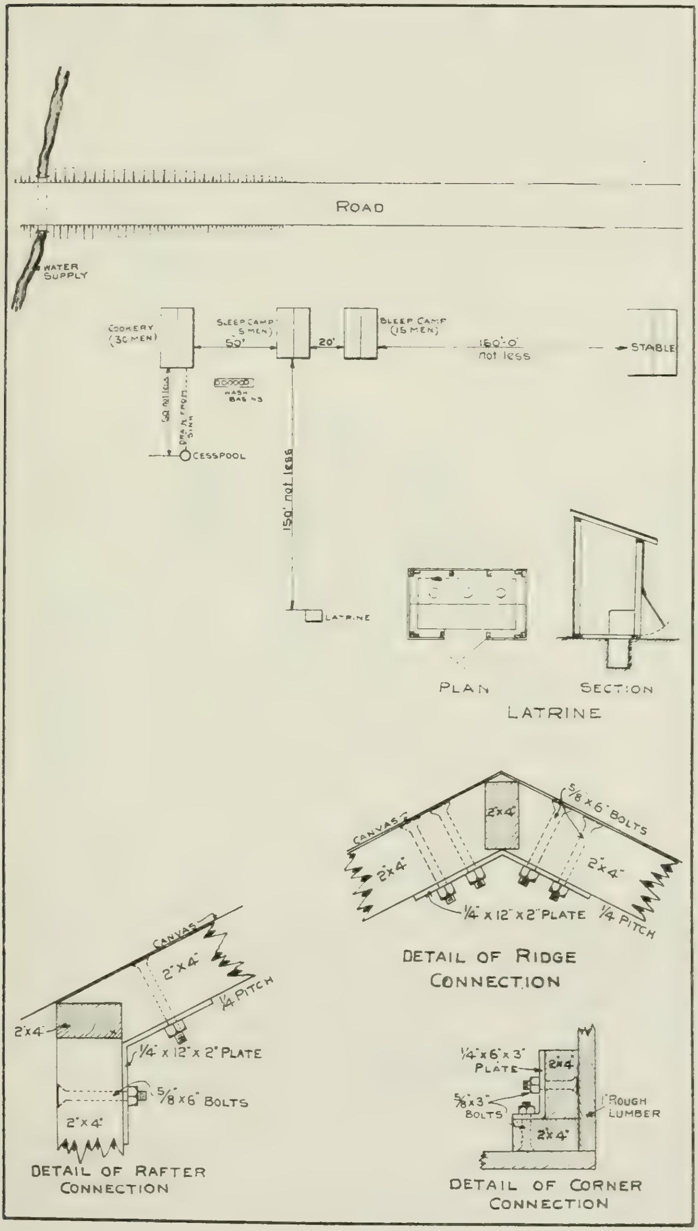


SUMMER COOKERY CAMP

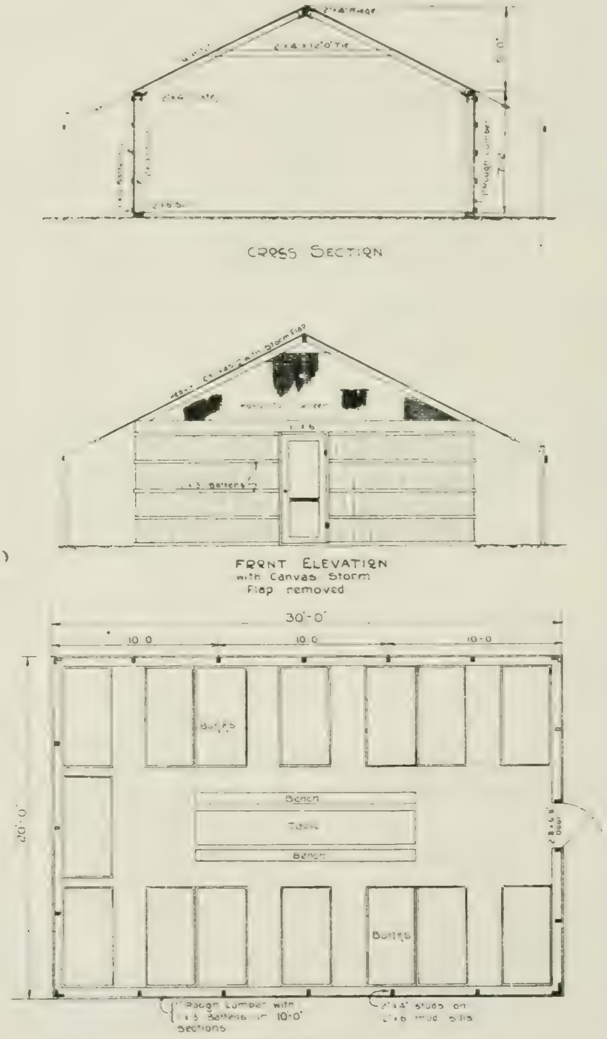
CAPACITY 30 MEN

SCALE ¼" = 1 FOOT.

THE PROVINCIAL BOARD OF HEALTH OF ONTARIO



THE PROVINCIAL BOARD OF HEALTH OF ONTARIO



CROSS SECTION

FRONT ELEVATION
with Canvas Storm
Flap removed

PLAN

SUMMER SLEEP CAMP

CAPACITY 15 MEN

Scale 1/4 = 1 Foot

THE WORK OF THE PROVINCIAL BOARD OF HEALTH.

The Annual Report of last year included a summary of the organization of the Board and of its work for the ten years previous to 1920 with a brief account of the early history of public health in Canada.

Herewith follows a sketch of the work of the various divisions for the present year. This account will be given in greater detail by the heads of the various divisions.

In 1921 the Board, which had entirely outgrown its old quarters in the Parliament Buildings and (for the Laboratories) at No. 5 Queen's Park, moved to Spadina House where in the one premises are housed the various divisions of the Board, including the bacteriological and chemical laboratories and the Registrar-General's Department (births, marriages and deaths records). In these quarters there will be ample room for development for some years to come, the administration will be easier, and in airy and healthy surroundings it is confidently expected that the public health interests of the province will continue to advance.

Division of Laboratories.

The facilities of this Division were further improved in 1921 by the establishment of two additional branch laboratories, the one at Owen Sound and the other at Peterborough. The work of our eight laboratories is generally as follows:

(1) Preparation of Phenarsenamine (606) one of the best known remedies for Syphilis. This preparation is distributed free of cost to hospitals, clinics, local boards of health and to physicians for the use of poor patients. It is manufactured, including overhead expense of every kind, at a lower price than it has been found possible to purchase a preparation of this kind. Supplied as it is *free* to the public *it is a direct contribution for the public relief.*

(2) Examination of specimens for diagnosis.
All the laboratories supply free to the physicians and the public as the case may be, reports upon specimens of sputum (tuberculosis), blood (typhoid and syphilis), swabs (diphtheria), smears (gonorrhoea, anthrax, etc.), milk, water, sewage, foods, contraband liquor, and such institutional supplies as soaps, coal, paints, disinfectants, etc. As these reports are of the highest value in affording assistance in the early diagnosis of disease, as well as for the purpose of protecting the government against the illegal trade in liquor, and fraud in respect to supplies purchased, it forms a *second direct contribution* to the public relief.

(3) Distribution of vaccines, serums and antitoxins is made from Toronto and from each of the branch laboratories of the Board to physicians, boards of health, hospitals and, when required, to the general public. The cost of the purchase or preparation of these products is about $80,000, purchase being made at a very low cost. As these preparations are entirely free to the public this service is a *third direct source of relief to the public.*

DIVISION OF SANITARY ENGINEERING.

The Division maintains in Stanley Park, Toronto, an Experimental Station, where research work and experiments with the latest devices for the purification of water and the disposal of sewage are carried on. The division maintains an engineering, chemical and laboratory force for investigation and reports upon the sanitary condition of municipalities, thus affording the Board the information necessary to determine what are the needs of municipalities in respect to water and sewerage facilities, and a basis for determining action in respect to the plans and specifications of these facilities brought before the Board for approval. It may be of interest to point out that in 1910 there were but eight water purification plants and one chlorination plant in Ontario. In the present year 42% of the public water supplies in Ontario are protected by filtration and over 82% by chlorination. Twelve years ago the typhoid death rate in the cities of Ontario was 51.3 per 100M; to-day this rate is 4.3 per 100M. As it is well known that impure water is the greatest vehicle we have in the transmission of typhoid fever, the significance of the improvement in public water becomes apparent. The service of the engineering division in its efforts to improve these supplies may thus be considered as one of no inconsiderable value to the public.

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING.

The Board has eighteen nurses engaged in giving demonstrations illustrating the value of a public health nurse to a given community. It must be understood that the public health nurse is not a sick nurse. Her service is to the pregnant woman, to the infant and the infant's mother, to the children and other members of the family, as an adjunct to medical inspection of schools and generally in the prevention of disease. The experience with the public health nurse in other countries and in Ontario, where she has been established for any length of time, shows that the death-rate among supervised pregnant women is reduced to an extraordinary extent; that the mortality among babies is less than 1/3 and that the ordinary accidents and dangers of pregnancy are reduced to a minimum as compared with countries and communities where there is no such supervision. There is no other means of anything like equal value in conveying the importance of intensive work in the prevention of disease to the public. There is no other public health work which will produce any greater direct results in a community and, compared with these results, no other public health effort is so cheap and effective. The demonstrations given by our nurses have served to convince many municipalities of its value, and caused the local authorities to appoint such nurses for themselves. As the cities and the towns adopt this system, the rural districts will in their turn learn of the experience gained in the urban communities and eventually the entire province will learn its value and adopt the same plan.

DIVISION OF PREVENTABLE DISEASES.

The control of venereal diseases as well as that of tuberculosis and all other communicable affections has been incorporated under a Division of Preventable Diseases. There are now some fifteen first-class clinics for the ready treatment of venereal affections, and during last year 5,092 patients were given an aggregate of 42,000 treatments. Substantial aid is given each clinic and all cases are treated free. The remedy, Phenarsenamine (606) is supplied free of cost.

In tuberculous cases occurring in the unorganized districts the Board assumes the cost of sanitorium treatment and in all cases of communicable disease, if the parties are unable to bear the cost of treatment, this is provided. In the province generally large sums are spent annually in grants to sanitoria and for the hospital and sanitorium care of persons suffering from tuberculosis, and it is hoped soon to supplement the work of physicians by providing a travelling clinic with X-ray apparatus for diagnostic purposes. The use of diptheria antitoxin provided free (as already pointed out) has done much to prevent the spread of and to reduce the mortality from this disease, but the number of deaths is still altogether too high. The reason for this is that the physician is not called in early enough and consequently the child is soaked with the diphtheria poison before antitoxin is given. If every case of diptheria were treated with antitoxin on the first day of disease there would be no deaths and soon there would be no infection from cases of this disease to be spread about. How can this result be accomplished?

(1) By early diagnosis and treatment.
(2) By the use of the Schick test.
(3) By the use where necessary of toxin antitoxin.

The Schick test is a means whereby we can readily tell if the child is immune to diphtheria or not. If immune, no precautions such as the giving of protective doses of diphtheria antitoxin are necessary. If not immune, the child may be protected by the use of weekly injections for three weeks of a small quantity of a mixture of toxin and antitoxin. The latter method is used with excellent effect in the school children of some of the larger cities. If its use were universal, diphtheria would soon die out.

In respect to the other communicable diseases all the well-known active means of prevention are adopted, and in the presence of these diseases all the known methods of checking their spread are utilized to the fullest extent.

One disease, cancer, deserves special mention. There is no doubt that it is increasing. It does not, like measles or consumption, for example, spread from person to person. The early signs are somewhat definite and a knowledge of these early signs is of the highest importance. In the early stages any lump or sore which may result in cancer gives no pain or symptoms of ill-health. In such circumstances people lull themselves into security because of the absence of pain. A lump in the breast of a woman over 40 years, a bleeding at or after the change of life or from the bowel, a wart or sore on the lower lip or tongue of a smoker are early signs, and *should in no case be neglected.*

DIVISION OF INDUSTRIAL HYGIENE.

The work of the Division has been based on the possibility of obtaining active co-operation among employers and employees rather than on the enforcement of the law.

A reference library has kept pace with the publication of new material which is very extensive in this field. Articles have been published in newspapers and medical and trade journals, drawing attention to the activities of the Division and problems involved in the maintenance of the health of workers.

A preliminary survey of medical histories of school children in Toronto has been made, in the attempt to determine the physical condition of children leaving school for industry. It is intended that this should be followed up by inquiry as to their early industrial experience, to estimate concretely what value might be obtained from a requirement that compulsory physical examination should accompany the granting of employment certificates.

A six months' demonstration was conducted in a small town in Ontario to determine how far it is practicable to make it possible for industries, employing small numbers of employees, to provide preventive medical service in their plants either by grouping together themselves or together with the municipality in the matter of expense and allotment of time of the health staff. Results were satisfactory but little progress in applying such experience can be made as long as industrial conditions remain as they are at present.

With reference to Occupational Disease, specific investigations are under way in an attempt to determine the incidence of lead poisoning among workers exposed in certain industries in Ontario. Voluntary physical examination of 110 house-painters has been made.

Some research is being conducted to determine the percentage of concentration in the air of volatile bodies used in paint which, when inhaled, produce symptoms.

It has been determined that miners' Phthisis is produced among hard rock miners in Northern Ontario. As a result of this information mine managers are placing no further orders for dry drills so that shortly the wet drill will be in use generally.

A number of individual instances of occupational disease have been investigated to determine the cause and adequate means for prevention.

Every attempt is being made to draw to the attention of employers that the Division exists to prevent disease among industrial workers, whether such disease arises directly out of the workers' employment or not. The influence on industry is the same in either case and is expensive to all concerned.

Division of Public Health Education.

In connection with the promotion of public health work there is nothing of greater value than education. When people understand the value of and the necessity for sanitation and hygiene the introduction of these salutary measures is comparatively easy. The means of health education are many and varied. Some are comparatively cheap, others are relatively expensive. The item of cost is always an important one for consideration of a health department. One of the cheapest and at the same time a very effective means of education is by means of Health Letters (weekly or daily), in the newspapers; circulars, leaflets, almanacs, booklets, and public health exhibitions are valuable but more expensive. Lectures are of value in most communities and, if supplemented by the use of slides and moving pictures, attract larger audiences and combine amusement with instruction. In the different phases of health instruction it is necessary to utilize the services of experts in the various lines. Thus a sanitary engineer supplies information in sewerage and waterworks, housing, plumbing and ventilation. An epidemiologist is a necessity in dealing with general communicable diseases. Specialists have their place in dealing with tuberculosis, venereal diseases and well-baby clinics. Of all means of public health education, however, no single effort is so effective as the use of the well trained public health nurse. She goes into a community and shows by her example just what a public health nurse can do and it is not long before the competent young woman gains the confidence of the public and is able to show that she or some nurse of corresponding ability is of great value to the community. Every health department recognizes the value of public health education and its limits are defined only by the extent of the financial appropriation.

Voluntary Agencies in Public Health work.

The assistance of voluntary agencies in promoting public health work is, if properly utilized, of great value. The Board has received valuable aid from such associations as the Red Cross Society, The Canadian Association for the Prevention of Tuberculosis, The National Council for Combating Venereal Disease, the Women's Institute, the Social Hygiene Council and others.

In order that authentic and non-conflicting information may reach the public and that the best results may accrue from such voluntary assistance, it seems desirable that there should be co-ordination of this work under some central authority. For this reason the Board, while greatly appreciating the work of the voluntary societies in the promotion of public health, is strongly of the opinion that without some such co-ordination much effort will be wasted. Above all the co-operation and good will of the great mass of our people must be enlisted in the great field of disease prevention. In this work the daily *Watchword* is *Education.*

DIVISION OF LABORATORIES

Diagnostic work, distribution of outfits, vaccines, serims and othet materials as carried on at the Main Labratories at Toronto, and the Branch Labratories at Kingston, London, Fort William, Sault Ste. Marie, North Bay, Peterboro and Owen Sound.

Dr. J. W. S. McCullough, D.P.H.,
Chief Officer of Health,
Spadina House, Spadina Crescent.
Toronto, Ontario.
(See Regulations attached.)

REPORT OF THE DIVISION OF LABORATORIES FOR THE YEAR 1921.

To the Chairman and Members of the Provincial Board of Health.

I have the honour to submit herewith, tabulated statements of the work performed in the Laboratories during the year 1921. This has been a year of construction and expansion. The main Laboratories were transferred from 5 Queen's Park to larger and better quarters in Spadina House. The move was accomplished without any interruption of routine work. The present space and equipment are both sufficient for carrying on the work in an efficient manner, and provide for growth which may be expected.

Two new branches were established at Owen Sound and Peterborough. These branches are well located, and equipped to render a full laboratory service to the districts in which they were placed.

Another noteworthy feature of the year's work is the establishment of special service on holidays, nights and Sundays in order to prevent delays in the distribution of laboratory products and in the diagnostic work in diphtheria. These extra duties have been divided up among several members of the staff, so that there is some one on call at the main laboratories until 10 p.m. every day in the year. Many instances have already occurred showing the benefits of this in early diagnosis and treatment.

Manufacture of arsenicals for the treatment of syphilis has been established on a satisfactory scale. Our various clinics are assured of a supply of a dependable drug at very low cost.

Extension along various lines of investigation is planned for improvement in the routine.

During the year this Division has co-operated with other Divisions especially Venereal Diseases, Public Health Education, and Industrial Hygiene in furthering the accomplishment of general aims along the lines of prevention, early diagnosis and treatment of all communicable diseases.

H. M. LANCASTER,
Director of Laboratories.

SUMMARY OF

	Main Laboratories Toronto								
	1911			1920			1921		
Diphtheria (Swabs)			1,068						16,705
Release from Quarantine		173						7,228	
Positive	91						1,604		
Negative	82						6,624		
Diagnosis		895						9,477	
Positive	226						1,601		
Negative	669						7,876		
Tuberculosis (Sputum)			1,650						2,421
Positive	402						324		
Negative	1,248						2,097		
Typhoid (Blood)			749						1,195
Positive	70						267		
Negative	679						928		
Syphilis:—									
Colloidal Gold Reaction									252
Wasserman Reaction									16,781
Very Strongly Positive							2,011		
Strongly Positive							422		
Positive							1,299		
Negative							13,049		
Spirochaeta Pallida									16
Positive							4		
Negative							12		
Gonorrhea									2,097
Positive							493		
Negative							1,604		
Rabies (Brains of Animals)			70						14
Negri bodies present							1		
Negri bodies absent							13		
Milk			168						182
Water			1,718						2,610
Bacteriological	1,668						2,561		
Chemical	50						49		
Liquor (for License Department)			241						818
Miscellaneous Specimens, including Coal for Public Institutions			86						437
Totals			5,750						43,528

DIAGNOSTIC WORK

Branch Laboratory Kingston			Branch Laboratory London			Branch Laboratory Fort William			Branch Laboratory Sault Ste. Marie			Branch Laboratory North Bay		
1921			1921			1921			1921			1921		
		1,995			3,777			688			1,552			841
	664			1,404			237			536			472	
130			395			97			214			167		
534			1,009			140			322			305		
	1,331			2,373			451			1,016			369	
165			468			101			295			110		
1,166			1,905			350			721			259		
		976			1,061			347			123			174
108			193			54			30			50		
868			868			293			93			124		
		580			511			77			18			92
162			158			27			3			61		
418			353			50			15			31		
					233			16			4			1
		1,223			3,142			886			337			271
144			630			151			67			53		
32			114			13			62			11		
9			140			20			19			20		
1,038			2,258			702			179			187		
								13			8			1
						7			4					
						6			4			1		
		198			359			266			167			172
57			101			75			98			47		
131			258			191			69			125		
					2,184			334			428			57
		758			1,030			390			1,776			482
62			659						1,383			482		
696			371			390			393					
		5			8									
		274			655			611			707			16
		6,009			12,960			3,628			5,120			2,107

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods			Syphilis					
	Release		Diagnosis							Wassermann Reaction				Spirochaeta Pallida	
	+	–	+	–	+	–	+	–	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	–	+	–
Algoma—															
Bruce Mines			1												
Collins Inlet								1							
Foleyet	3	2	1	2				1		2	2	2	29	1	
Hornepayne											1				
Killarney															
Levack															
Nesterville						2				1					
Plummer															
Sault Ste. Marie				1						1	1		4		
Brant—															
Brantford	3	7	3	9	7	65	5	19		44	33	17	152		1
Burford		1		1		1		1							
Cainsville	1			1		1				4		3	12		
Ohsweken		2	1	5		1				12	1	7	16		
Paris		1		2		3	2	3			1		9		
St. George		4	7	6		2				1			5		
Scotland						2		1							
Bruce—															
Allenford				1		1									
Barrow Bay															
Cargill						2									
Chesley		1		3		5	1								
Elmwood				3											
Hepworth			1	10		3		2					1		
Kincardine				1		2									
Lion's Head										1			1		
Lucknow	3	3	5	2	1	3		1					7		
Mildmay	2	14	1	2	1	4		2		1			3		
North Bruce															
Paisley			1	2	1	6	1	4					1		
Port Elgin		1		3	3	12							1		
Ripley	3	5	3	1											
Southampton						1									
Tara		1		1											
Teeswater						3									
Tiverton				2			1	1							
Walkerton				1		5		2							
Wiarton			7	10	9	19		3		1					
Carleton—															
Ashton					1	3									
Carp		1	1			2							1		
Kinburn															
Manotick			2		2	8	1	2							
North Gower				1		1		3							
Ottawa			2		2	5	2	11		283	37	104	1480		2
Richmond								1							
Westboro										1		1	6		
Dufferin—															
Grand Valley				2	1		2	1							
Horning's Mills															
Orangeville	2	13	5	12	1	9	1	3					3		
Shelburne	2	4	3	13				2							

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological											
										Tubercle Bac.		Pus Cells									
	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
																1			2		4
																					1
																					45
	1																	19			21
																			1		1
																		1			1
																					3
																		1			1
																			2		9
11	19																	74	17	3	489
																		2			6
																					22
2	1																			1	49
																					21
																		1			26
																					3
	1																				3
																		1			1
																				1	3
																		15			25
																					3
																				1	18
																	2	4			9
																					2
																					25
1	3																	17		6	57
																		1			1
																					16
																					20
																					12
																					1
																		9			11
																					3
																					4
	1																	1	22		32
		dog	1															2		1	53
																		2			6
																					5
																		1			1
																					15
																					5
17	27																	1	58	4	2035
																					1
																					8
																					6
																	1				1
																		2		1	52
																					24

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	−	+	−
Dundas—															
Iroquois						1							1		
Morrisburg		2			1	14		2		1			3		
Newington	1	1		4	2	2	1	6		1			2		
Winchester													1		
Durham—															
Bethany			2	1		1		4							
Blackstock			1	3		4									
Bowmanville	6	34	14	58		17	3	9		2			3		
Canton															
Ida															
Enniskillen	13	25	5	25		2	1	2							
Millbrook	38	71	19	101		4	5	8					1		
Newcastle	1	1													
Orono				1	1	8		3							
Pontypool						1		2							
Port Hope	1	3	1	13	5	22	5	13		3		2	8		
Elgin—															
Fingal						1									
St. Thomas															
Straffordville			5			1									
Essex—															
Amherstburg			3			4									
Comber						1									
Essex	2	3	2	1	1	3		2							
Ford								1					3		
Harrow															
Kingsville		2	1	4		5	2	3							
Leamington	104	415	23	31	1	4	2			4	1	2	14		
Sandwich										2					
Tecumseh						1		1					1		
Walkerville												2	7		
Windsor						4		1		69	11	25	292		
Woodslee								1							
Frontenac—															
Canonto															
Kingston															
Glengarry—															
Alexandria	5	4	1	1		1		2							
Apple Hill						5									
Dalhousie Mills					1	7		2					1		
Dalkeith				2	1	3									
Dunvegan						1	2	2							
Lancaster						1									
Maxville		2		4	1	10	2	12		1					
Williamstown		3	2	1	2	2									
Grenville—															
Kemptville								3					2		
Merrickville				2		1									
Prescott						1		2		1		1	6		
Spencerville						1									
Grey—															
Ayton								2							

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhoea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies		Animal Inoculations	Food Content		Preservatives		Bacteriological					Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
										Tubercle Bac.		Pus Cells		Count							
+	−		+	−		Fats	Total Solids	+	−	+	−	+	−								
1	1																				4
																1		4			28
																		3			23
																					1
																					11
																		3			8
1	4															1		4	2	1	160
																		2			2
																		1			1
																		1			74
2	5																	9			262
																					2
4	11																	2		1	21
																		3			6
4	4															1		68	8	1	169
																					1
																		1			1
																					6
																					7
																					1
2																			12		28
																					4
																		1			1
																		7			24
1	5																			1	608
																					2
	1																				4
																					9
	3																	25	22		452
																					1
																				1	1
																				12	12
																			4		18
																					5
																					11
																					6
																					5
																					1
3																		6			41
																					10
																		1			6
																		1			4
	1																	2			14
																					1
																				1	1

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochæta Pallida	
	+	–	+	–	+	–	+	–		Very Strongly Positive	Strongly Positive	+	–	+	–
Grey—															
Ayton															
Chatsworth			2	4		9		2					2		
Clarksburg		2		3		1									
Dromore				1									1		
Dundalk			2	4		11		2				1	4		
Durham	1	1	3	6	1	8	2	2							
East Linton							1								
Flesherton				2	1	6							2		
Hanover						8	10	16							
Heathcote						1	2								
Holstein				2		4		1							
McKeller				3		3									
Markdale	3	1	1	2	1	2		1							
Meaford		1		2	1	7	4	16					1		
Neustadt		6	5	6											
Owen Sound	118	178	216	1916	6	42	7	22		16	5	11	77		1
Priceville					4	5									
Shallow Lake				1											
Woodford															
Haldimand—															
Caledonia								2							
Canfield				3		2									
Cayuga						1							2		
Dunnville	9	14	8	17		16	3	23		3			8		
Fisherville	2	1		2	1										
Hagersville			6	202		2		1				2	4		
Jarvis		4	1	5		2									
Selkirk				1		2							3		
Haliburton—															
Haliburton			1	8	1	17	3	1		3		2	40		
Minden						2	4	3							
Halton—															
Acton	7	5	7	7	1			1					2		
Bronte					1										
Burlington	3	6	3	11	1	6		7		2		1	1		
Freeman															
Georgetown	22	31	4	21	1	2		6				1			
Milton				2	1	9		1				2	3		
Norval															
Oakville	15	7	5	5		1	1	8					6		
Hastings—															
Belleville	1	21	13	92	6	27	5	35		6	1		15		
Deseronto				1	1	8		1					1		
Eldorado					3	4		2		1		1	3		
Frankford		5		2	2	3	1	7							
Glen Miller															
Latta				1											
Madoc					4	8		1							
Marmora	4	8	3	7	3	8		1				1			
Roslin		4		3		5	1	4					2		
Shannonville							3								
Springbrook			2												
Stirling					1	1									
Sulphide															
Trenton			1		1	11		5		2		2	10		1
Tweed					1	3									

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhoea +	Gonorrhoea −	Rabies Diagnosis Animal	Rabies Diagnosis Negri Bodies +	Rabies Diagnosis Negri Bodies −	Rabies Diagnosis Animal Inoculations	Milk Food Content Fats	Milk Food Content Total Solids	Milk Preservatives +	Milk Preservatives −	Milk Bacteriological Tubercle Bac. +	Milk Bacteriological Tubercle Bac. −	Milk Bacteriological Pus Cells +	Milk Bacteriological Pus Cells −	Milk Bacteriological Count	Milk Extraneous Matter	Number of Milk Samples	Waters Chemical	Waters Bacterial	Liquors for License Department	Miscellaneous Specimens	Total for Year
																				1	1
1	2																	2		1	25
																					6
	1																				3
1	1																				26
	3															1		10			38
																		2			3
																					11
1	2																	13			50
																					3
																		4			11
																					6
																		1			12
																		5			37
																				2	19
21																		16	21	3	2716
	40																	2		1	12
																					1
																		2			2
																					2
	2																				7
																					3
1	2																	9	5	2	120
																	1				7
	3																				220
																					12
																					6
2	8																	2			88
																		2			11
																	2	5			37
																1		6			8
																		39			80
																2					2
																		2			90
	1																	5			24
																		3			3
3	2																	23	2	1	79
																		27			249
3	2																				17
																					14
																		35			55
																		2			2
																					1
																		4			17
2	4																	14		2	57
																				1	20
																					3
																		21			23
																		1			3
																		1			1
2	2																	4		2	43
																				1	5

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochaeta Pallida	
	+	—	+	—	+	—	+	—		Very Strongly Positive	Strongly Positive	+	—	+	—
Huron															
Aurburn						1		1							
Belgrave															
Blyth					1	2									
Brussels					1	3		5							
Crediton	1	4	1	1											
Dunnganon					1										
Ethel	1	1	1	3		1		1							
Exeter	1	4	1	8	3	2									
Goderich	6	2	2	12	3	16	1	3				1	10		
Gorrie															
Kentail													2		
Seaforth	1	6	2	3											
Walton													1		
Wingham			2	4		3	3	1		1			2		
Wroxeter							1								
Kent—															
Chatham	6	4	3	3	7	35	1	3		2	1		17		
Dresden						2		11							
Merlin															
Tilbury						2							1		
Wallaceburg			3			1		1		1			1		
Lambton—															
Brigden						2							1		
Forest	3	5	3												
Inwood			1	1											
Petrolia	3	3	1	6	1	4	1						4		
Port Lambton							1						2		
Sarnia			3	7	2	16	2	4		5		1	26		
Thedford	2		1	3		2	2	4							
Watford			1												
Wyoming						1									
Lanark—															
Almonte		3	2	5		2							1		
Carleton Place			1	1		2		1							
Dalhousie Lake															
Lanark				1			2	1					1		
Pakenham	4	2	2	4		9	1	1					3		
Perth				2		2		1					4		
Smith's Falls	5	33	26	43						1			10		
Leeds—															
Brockville	2	3	3	9	6	16	2	7		4		1	25		
Elgin				1		1									
Frankville													1		
Gananoque	5	7	4	5				2							
Lansdowne						1		1							
Lyn						3									
Newboro															
Lennox and Addington—															
Tamworth	1	1	2	2				1							
Lincoln—															
Beamsville	3	2	10	4	2	5	3	5					4		
Grimsby		1	10	4									1		
Jordan	1		2	1	3	4	1	3							
Lundy's Lane						1									
Merriton		1	2		4	1						1	1		

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con*

Gonorrhœa		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preser-vatives		Bacteriological					Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
										Tubercle Bac.		Pus Cells		Count							
+	−	Animal	+	−	Animal Inoculations	Fats	Total Solids	+	−	+	−	+	−								
																					2
																				1	1
																					3
																		1			10
																					7
																					1
																					8
2	3																				24
2	2																		9	2	71
																		2		1	3
																					2
																		1			13
	2																				1
1																		2			21
																					1
																		1	1	3	87
																		1	1		15
																		11			11
1	1																				5
1																					8
																					3
	1																	7			19
																					2
																					23
																					3
2	3																		8	1	80
1																					15
																					1
																					1
																					13
1	2																	37	3		48
																		2			2
																		1			6
																		1			27
																					9
																			1		119
																			4	29	111
																					2
																					1
																					23
																					2
																					3
																				1	1
																			1		8
2	1																	3			44
																		1			17
																		9			24
																					1
																					10

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Wassermann Reaction					Spirochæta Pallida	
	+	−	+	−	+	−	+	−	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	−	+	−
Niagara-on-the-Lake		1		1		1									
Port Dalhousie								1							
St. Catharines	98	209	21	132	10	71	7	14		59	8	27	298		
St. Davids						2									
Smithville	2	6	2					1							
Virgil															
Manitoulin—															
Gore Bay					1										
Little Current		4	2			3									
Middlesex—															
Ailsa Craig				1	2	1									
Grafton		1	1	1											
London						1					1		2		
Strathroy				1											
Muskoka and Parry Sound—															
Bala	2		2					2							
Bracebridge			1	3	1	9	1	2				2	8		
Burk's Falls	2	3	2	7		5		2				1	1		
Byng Inlet															
Callander										1			1		
Depot Harbour					2		4	5					4		
Gravenhurst			5	4		3	2	3		2		1	24		
Huntsville				5		4		1					4		
Jarlsburg															
Kearney				1		1									
Maganatawan		1	1	1											
Muskoka				1									1		
Pakesley	1	4	4	3	1	3						1	2		
Parry Sound	6	2	3	6	2	19	2	17		6		1	28		
Port Carling						2									
Port Sandfield						1									
Powassan	1	6	5	4		7		2					2		
Sanitorium													1		
Severn Bridge			3	8		2		1							
South River	1		3	4		3		4					1		
Sprucedale	3	7	2	5		6							3		
Sundridge	1	2	2	6			4	7							
Trout Creek				4		1							1		
Utterson															
Windermere															
Nipissing—															
Algonquin Park				1									1		
Mattawa															
North Bay	7	16	11	20		2				3	3	3	29		
Sturgeon Falls	7	30	2	8		2				2	1	1	2		
Norfolk—															
Delhi		3	6	9		23	1	6		1		1	7		
Port Dover			2	6	1	5		3							
Port Rowan					2	3		2			1		2		
St. Williams													1		
Simcoe	2	3	3	10	5	14	5	8		11	1	7	56		
Waterford		2	1	7	2	5		4					3		

ONTARIO AT TORONTO FOR THE YEAR 1920.—SPECIMENS EXAMINED.—*Con.*

Gonorrhœa		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies		Animal Inoculations	Food Content		Preservatives		Bacteriological					Extraneous Matter	Number of Milk Samples					
										Tubercle Bac.		Pus Cells									
+	−	Animal	+	−		Fats	Total Solids	+	−	+	−	+	−	Count			Chemical	Bacterial			
																		13			16
																		4			5
	6															1		18	10		989
																					2
2																					13
																		1			1
																					1
1																			1		11
																					4
																					3
																				12	16
																					1
																		1			7
3	4																				34
	1																	1			25
																		4			4
																					2
																		7			22
																1		19			64
	1																	2			17
		dog	1														1	2			4
																		2			4
																		1			4
																		2			4
																		5			24
3	8																2	7	2	2	116
																					2
																					1
1																					28
																					1
																					14
																			2		18
																					26
																					22
	2																				10
																		21			21
																		8			8
																					2
																			2		2
2	6																	1	17		120
1	2																		2		60
1																		9			67
1																		1			19
																					10
																					1
																3		32	12	1	173
																		5			29

REPORT FROM BRANCH LABORATORIES OF THE PROVINCIAL BOARD OF

unicipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−		Very Strongly Positive	Strongly Positive	+	−	+	−
Northumberland															
Brighton				2		8		5		3	1	4	9		
Camborne								1							
Campbellford				1	2	6		1				1	4		
Castleton						1		1							
Cobourg	10	6	5	18	2	16	5	11		7	1	5	40		
Colborne						1	1	1							
Cold Springs					1										
Grafton		1		1				1							
Hastings				2		4		1		1					
Roseneath				5		1	1	3							
Warkworth			1	2	1	2							2		
Ontario—															
Beaverton	6	5	4	4		2									
Brechin					2	3									
Brooklin						3									
Brougham						1									
Cannington				1		1									
Claremont			1	7		4		3							
Goodwood								1							
Oshawa	113	489	147	876	12	55	3	14		14		4	39		
Pickering						1									
Port Bolster															
Port Perry				4	1	5									
Port Whitby															
Sunderland	3		1	2		4	1	2					1		
Uxbridge			3	4		10		2					2		
Whitby	1			4		6	1	3		3	1		17		
Zephyr				1											
Oxford—															
Burgessville				1											
Drumbo			1	1		3									
Embro															
Ingersoll	2	1					2	10							
Mount Elgin	1	1													
Norwich				1		1		4					2		
Otterville	1	7	1	4		5									
Plattsville			1	2	1	7		2					1		
Springford															
Tavistock						5					1		1		
Tillsonburg			6	3		12	1	10		3		3	15		
Woodstock		3	2	15	1	11	1	11		2			17		
Peel—															
Alton		1	3	22	1	2		3					3		
Bolton				6	1	5	2	1							
Brampton	2	3	8	8	1	4							1		
Burnhamthorpe						1									
Caledon						3	1	1							
Cheltenham															
Clarkson				1		3		1		2					
Cooksville		1	2	3		2									
Dixie				2											
Erindale															
Forks of Credit															
Inglewood	7	9	1	1											
Lorne Park															
Meadowvale															

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhœa		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
		Animal	Negri Bodies		Animal Inoculations	Food Content		Preservatives		Bacteriological				Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
						Fats	Total Solids			Tubercle Bac.		Pus Cells									
+	−		+	−				+	−	+	−	+	−								
4	3																	1			40
																					1
																		10			25
																		16			18
3	7																	5	7	5	153
																				1	4
																		2			3
																					3
																					8
																					10
																					10
																					21
																		12			17
																				6	9
																		1			2
																		4			6
1	1																				17
																					1
23	70															15	1	55	6	2	1938
																					1
																		1			1
																		2			12
																		1			1
																					14
1	1																	2			25
	5																	7		2	50
																					1
																					1
																		3			8
																		1			1
																					15
																					2
																		2			10
																		21			39
																		1		2	17
																		1			1
																					7
																				3	56
																			2		65
[illegible]	2																	1			40
	1																				16
																3	2	13	4	1	50
																					1
	1																	8			14
																4		5			9
																					7
																					8
																		2			4
																		2			2
																		3			3
																					18
																		10			10
																		4			4

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochæta Pallida	
	+	−	+	−	+	−	+	−		Very Strongly Positive	Strongly Positive	+	−	−	+
Palgrave				3	1	3									
Port Credit		3	1	4		9		2							
Streetsville				3											
Perth—															
Atwood				1											
Listowel	9	7	4	7		8	1	5							
Mitchell				3	1	6	1			2			7		
Monkton				1									2		
St. Mary's					2	2									
Science Hill															
Sebringville				1											
Stratford	1		1	2	2	29	2	3			1	3	3		
Peterborough—															
Bailieborough				1		1	2	9							
Havelock		1	5	2		1		1							
Keene		5	2	5		1	1	3			1		3		
Lakefield			1		1	1	1								
Peterboro	233	576	179	565	9	44	9	6		10		8	84		
Warsaw													1		
Prescott—															
Alfred															
Fournier													1		
Hawkesbury			1		1	14	2	6		1			4	2	2
L'Original															
Plantagenet						1									
St. Isadore							1	3							
Vankleek Hill				1		1				1			4		
Prince Edward—															
Bloomfield				1	1										
Consecon	2	7	6	2		2		1							
Demorestville															
Picton				2	2	4	2	9		1			3		
Wellington				1		1		1			1				
Rainy River—															
Fort Frances															
Stratton		1													
Renfrew—															
Arnprior			3	2	2	4							4		
Beachburg						1									
Cobden	1	9	2	14	1	7		2							
Eganville			2	2	2	14									
Forester's Falls				2		5									
Pembroke	1	1	7	10		2				8	1	2	18		
Renfrew				1		1									
Russell—															
Bourget			2	2	1	2		1		1			2		
Clarence Creek	21	20	1	3		1									
Eastview										2		2	6		
Embrun				1		2									
Metcalfe	3	2	1		2	4									
Osgoode						1									
Russell					2	10									
Vars	3	4	3	4											
Simcoe—															
Allandale															
Alliston				2	2	3		1					5		
Angus		1	2	4											

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhœa		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological					Extraneous Matter	Number of Milk Samples					
										Tubercle Bac.		Pus Cells		Count							
+	−	Animal	+	−	Animal Inoculations	Fats	Total Solids	+	−	+	−	+	−				Chemical	Bacterial			
																					7
																	4	10			33
																		3			6
																	1	2			4
																					41
1	3																	2		1	27
																					3
																					4
																		1			1
																		2		1	4
		2dog	2															15		2	66
																		5			18
1																		48			59
																				1	22
																		1			5
2	7															1	1	3		4	1741
																					1
																		5			5
1	1																				3
1	2																			1	37
																			5		5
																			3		4
																					4
																					7
																					2
																					20
																		8			8
1																		16		1	41
																					4
																			2		2
																					1
1																				1	17
																					1
1																		2			39
																		1			21
																					7
																		68	2		120
																		2	4		8
1	3																	2			17
																	4				50
																					10
																					3
																					12
	2																				3
																					12
																					14
																		3			3
																		2			15
																					7

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Wassermann Reaction					Spirochaeta Pallida	
	+	–	+	–	+	–	+	–	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	–	+	–
Simcoe—*Con.*															
Atherley															
Barrie	3	9	5	44	4	17	5	14		6		3	16		
Beeton				1											
Belle Ewart															
Bond Head	1	4	3	4											
Bradford	2	3	1	7	1	2		1							
Camp Borden													3		
Churchill			1	3									1		
Coldwater	1	1		2	2	8	2	3					1		
Collingwood	3	14	6	35	4	7	3	7		13	4	5	78		
Cookstown			1	1	1	4		1		1					
Creemore		11	4	15		7		1					2		
Edgar				2											
Elmvale			2	4		1	1	2					2		
Everett		4	3			1		1			1	1			
Hawkstone															
Hillsdale				1											
Midland	2	2	2	11	2	8		1		9	1	3	42		
Orillia	55	161	41	85	4	16	10	19		4		2	30		
Penetanguishene	2	2		5	1	13		2					3		
Port McNicoll				3			1	2					2		
Stayner		3	1	4		2	1	8					3		
Stroud		3	1	4		1	1	2							
Thornton	3	5	2	11				1							
Tottenham		1	2	4	2	1							1		
Victoria Harbor	3	2	4	5		8		8		2			8		
Washago															
Waubaushene			1												
Stormont—															
Aultsville						3									
Avonmore					1										
Cornwall	3	3	7	10	5	28		1		11		2	7		
Crysler						1									
Finch						1		1					1		
Mille Roches			1	1	1	1									
Moose Creek					4	6		2							
Sudbury—															
Burwash	1	3	1	1	1	24				58	6	31	913		
Capreol			3	5		3				1			1		
Chapleau		1	1	1		2	1			1			5		
Coniston					1	1							1		
Copper Cliff			2	6		7		1		1			3		
Creighton Mine		3	2	3		3	1			2	1	2	7		
Eloas															
Espanola			2		2	12				1			1		
Massey	2	1	8	12											
Sudbury				2	2	25		5		19	1	5	91		
Webbwood			3	4						2			2		
Thunder Bay—															
Grant													1		
Fort William															
Port Arthur						1		1							

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhoea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological											
										Tubercle Bac.		Pus Cells									
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
																		1			1
6	9																	18	1	1	161
																					1
																		1			1
																					12
	2																				19
																					3
																		6			10
																		1		1	22
5	10															41	8	11	4		258
																		1			10
																					40
																					2
																					12
	1																	6			18
																		1			1
																					1
6	8															1					98
	2	cow	1															156	5	46	637
1	1																		2	23	55
																					8
																		1			23
																		2			14
																		1			23
																			2		13
	3															1		7			51
																1					1
																					1
																					3
																		1			2
	5																		1		83
																					1
																					3
																					4
																		1			13
7	27																	4			1077
	1																	26			40
2	5																				19
																1		17			21
	1																	18	3		42
	1																				25
																		2			2
	1															1		19			39
																		6			29
2																		27	8		187
																					11
																					1
																			2		2
																			14		16

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−		Very Strongly Positive	Strongly Positive	+	−	+	−
Timiskaming—															
Cobalt	2	....	2	3	....	6	....	1	....	1	2	....	10	....	....
Cochrane	....	....	1	....	....	3	3	2	....	1	....	1	24	....	....
Englehart	....	....	2	3	1	3	....	1	....	1	1	2	8	....	....
Gowganda	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....
Haileybury	....	....	1	....	2	7	3	6	....	....	....	....	10	....	....
Hearst	....	6	....	1	....	....	1	5	....	1	....	1	....	....	....
Iroquois Falls	....	....	....	....	....	4	....	1	....	1	....	1	12	....	....
Kapuskasing	....	....	....	1	....	....	....	2	....	2	....	1	....	....	....
Kirkland Lake	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....
Larder Lake	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Matheson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Monteith	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Nellie Lake	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Liskeard	2	5	5	5	1	6	....	2	....	3	....	2	7	....	....
North Cobalt	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....
Schumacher	....	....	....	....	....	1	....	....	....	1	....	....	2	....	....
Smooth Rock Falls	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
South Porcupine	....	....	....	2	1	4	....	1	....	3	....	1	6	1	1
Timmins	....	....	1	3	2	11	2	8	....	10	....	....	23	....	....
Whitney	....	....	....	1	....	....	....	2	....	....	....	....	....	....	....
Victoria—															
Bobcaygeon	3	2	7	16	1	7	....	2	....	1	1	1	3	....	....
Fenelon Falls	....	....	....	2	....	....	1	3	....	....	....	....	....	....	....
Kinmount	....	....	7	19	....	....	....	....	....	....	....	....	....	....	....
Kirkfield	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lindsay	....	7	2	7	8	26	2	11	....	....	....	....	3	....	....
Little Britain	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....
Manilla	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Omemee	....	1	....	5	....	4	....	1	....	....	1	....	7	....	....
Woodville	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....
Waterloo—															
Ayr	....	4	2	2	....	9	2	8	....	....	....	....	1	....	....
Elmira	....	....	....	1	....	8	....	....	....	3	....	....	....	....	....
Galt	5	6	7	19	2	23	....	3	....	16	1	5	62	....	....
Hespeler	1	2	1	5	2	5	....	....	....	3	....	....	13	....	....
Kitchener	67	278	48	132	13	102	5	8	....	8	3	4	59	....	....
Linwood	....	....	....	....	2	3	....	....	....	1	....	....	1	....	....
New Dundee	....	....	....	....	....	1	....	1	....	....	....	....	1	....	....
New Hamburg	1	3	7	2	1	2	....	4	....	....	....	....	....	....	....
Preston	3	5	4	10	1	1	....	1	....	1	....	1	1	....	....
Waterloo	3	10	5	7	....	9	....	....	....	1	....	....	2	....	....
West Montrose	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Welland—															
Bridgeburg	19	26	19	20	1	4	3	2	....	....	....	....	....	....	....
Chippawa	....	1	3	....	1	7	2	2	....	....	....	....	....	....	....
Crystal Beach	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Fenwick	....	1	1	....	2	2	....	1	....	....	....	....	....	....	....
Fonthill	....	....	....	....	....	2	....	2	....	....	....	....	....	....	....
Fort Erie	....	....	....	1	....	3	....	....	....	....	....	....	....	....	....
Niagara Falls	7	2	4	16	2	32	15	36	....	44	7	15	142	....	....
Port Colborne	1	4	8	4	1	5	1	1	....	2	1	1	5	....	....
Port Robinson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ridgeway	2	1	....	7	....	2	1	2	....	6	1	2	7	....	....
Stamford	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhoe		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preserv-atives		Bacteriological											
										Tuber-cle Bac.		Pus Cells									
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
																		12		1	40
2	1																	2	2	1	43
	1																	3			26
																		1			3
	7																	7			43
																					15
																					19
																		3			9
																			1		3
2	1																				3
																		1			1
																		1			1
	1																	3			4
	1																	1			40
																					3
	1																	1			6
																					1
3	3															4		28			58
9	13																				82
																					3
	1																	3			48
																		1			7
																		19			45
																		26			26
1																					67
																					5
																					1
																					19
																					3
1	1																	3			33
1	4																	2			19
5	7																	51	1	1	214
1																		6			39
9	22															1	10	33			802
																		1			8
																					3
																		6			26
	2																	3			33
1	2																		2		42
																		3			3
																					94
																		4			20
																		27	2		30
																					7
																		1			5
																					4
14	23	dog	1															146	10	3	519
1	1																	8			44
																		1			1
2	1																	9	6		49
																		2			2
																					5

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−		Very Strongly Positive	Strongly Positive	+	−	+	−
Welland—*Con.*															
Stevensville		1	2	1		1									
Thorold	2		1	4		8				3			11		
Welland	7	12	8	13	3	19	3	9		22	2	13	145		2
Wellington—															
Alma				1	2	2		1							
Arthur				5	1	1	2	3					1		
Belwood				1				1				1	1		
Drayton		2	5	8			3	7					5		
Elora			1		2	5		1							
Erin				3	1	3	1								
Fergus				1		2	2						7		
Glen Allen						5									
Guelph	32	57	45	84	3	27	2	20		69	12	53	947		
Harriston	6	1	2	8	2	8		2					2		
Hillsburg			1			1	1								
Moorefield				4		4									
Morriston				2				2							
Mount Forest				3		8		1							
Palmerston				2		1		1					1		
Rockwood				3		3							2		
Wentworth—															
Ancaster															
Bartonville				27											
Binbrook		2		13											
Carlisle															
Dundas	1					1				1			8		
Hamilton		1				1				17	2	5	93		
Lynden				3	1	3		3					2		
Stoney Creek															
York—															
Agincourt	4	13	3	12	1	9		3		1	1		2		
Aurora	9	22	22	43		1	1	3		1		1			
Birch Cliff	1	4	2	5				2				3	10		
Fairbank	9	36	6	13		6									
Gormley															
Highland Creek				1											
Humber Bay															
Islington															
Jackson's Point															
Jefferson															
Keswick		1	1	3											
King		1	3	3		1							1		
Lambton Mills								1							
Langstaff										4		3	53		
Lansing															
Leaside				1											
Long Branch	3	3	1	9											
Maple															
Markham				2		2						1	4		
Milliken	2			3		1									
Mimico	1	9	36	1037	3	8	1	3		3		1	11		
Mimico Beach	7	30	10	33							1		5		
Mount Albert	3	7	1	8		3									
Mount Dennis	1	9	5	9		2		3		1			3	1	
Newmarket	2	3	1	2		4	1						1		
Newtonbrook															

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con*,

Gonorrhoea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological					Extraneous Matter	Number of Milk Samples	Chemical	Bacteria			
										Tubercle Bac.		Pus Cells									
+	−	Animal	+	−	Animal Inoculations	Fats	Total Solids	+	−	+	−	+	−	Count							
																					5
																		4			33
1	18	cow	1													4		8	52	1	343
																		4			10
																		2			15
																					4
																		1			31
																		1			10
																		12		2	22
																		3		1	16
																					5
17	61																	168	4	76	1677
1																		1		1	34
2																		5			10
																		1			9
																					4
																				1	13
																		1			6
1																					9
																		2			2
																					27
																					15
																		1			1
																	1	7	11		30
		dog	1															6	72	1	199
																		2		1	15
																		16			16
																		13			62
2																		13			118
																					27
																		1	1		72
		dog	1 +															1			2
																		1			2
																		2			2
																		2			2
																		1			1
																		11			11
																		12		2	19
																					9
																					1
																		1			61
																		2			2
																					1
																		6			22
																		2			2
	4																	18		1	32
																					6
																52		6	1	32	1204
																			1	1	88
																					22
	1																	2			37
																		1			15
																		4			4

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−		Very Strongly Positive	Strongly Positive	+	−	+	−
York—*Con.*															
New Toronto	74	135	52	226	....	5	....	1	....	2	....	2	5	....	....
Pefferlaw	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Queensville	7	17	4	5	....	....	1	3	....	....	....	....	2	....	....
Richmond Hill	7	11	9	10	....	11	2	8	....	8	....	1	5	....	....
Roches Point	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Scarboro'	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Schomberg	1	2	....	....	....	10	....	....	....	....	....	....	1	....	....
Stouffville	....	....	....	2	1	3	....	....	....	1	....	....	5	....	....
Sutton West	....	2	2	5	....	....	1	2	....	1	....	....	....	....	....
Swansea	....	2	....	9	....	1	....	....	....	4	....	....	4	....	....
Thornhill	4	....	....	18	1	9	1	1	....	76	14	57	1271	....	....
Toronto	240	3149	123	832	12	107	4	28	252	927	240	794	5631	....	....
Unionville	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
West Hill	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Weston	10	16	16	64	....	5	....	7	....	....	....	1	8	....	....
West Toronto	1	8	1	....	....	....	....	....	....	....	....	....	....	....	....
Willowdale	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....
Woodbridge	....	....	....	2	....	1	....	1	....	....	....	....	1	....	....
Totals	1604	6624	1601	7876	324	2097	267	928	252	2011	422	1299	13049	4	12

Grand Total 44,528

ONTARIO AT TORONTO FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preser-vatives		Bacteriological											
										Tuber-cle Bac.		Pus Cells									
+	−	Animal	+	−	Animal Inoculations	Fats	Total Solids	+	−	+	−	+	−	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
1	2															31		2			538
																		2			2
																		1			40
2	7															2		10	2	1	96
																		2	1		4
																		5	3		8
																					14
																		4		1	17
	1																	7			21
																					20
																		2			1454
228	10	23 lct 6dg	7													8	8	199	315	99	14227
																		1			1
																		2			2
	3															1		20			151
																					10
																		1			4
																		1			6
493	16	04		113												182	49	2561	818	437	4452

SUMMARY OF OUTFITS, VACCINE, PHENARSENAMINE AND TREATMENTS SUPPLIED DURING THE YEAR 1921.

Outfits		85,314
Syphilis (Wasserman)	23,540	
Gonorrhea	5,228	
Water	3,526	
Diphtheria	42,746	
Tuberculosis	4,209	
Typhoid	6,065	
Vaccine		51,903
Typhoid-paratyphoid	18,430	
Pertussis (whooping-cough)	33,473	
Silver Nitrate (for prevention of Ophthalmia)		20,185
Pasteur Preventive (for Rabies)		
Cases		96
Injections		4
Phenarsenamine:—		
Ampules		13,970
Grams		7114.2

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1921.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. of Injections
Algoma –													
Blind River				1				1					
Collin's Inlet							12	12	20	30			
Desbarats										40	15		
Foleyet	78		24		36	5	12	155			65		
Hornepayne				20				20					
Levack				6				6					
Plummer				1				1					
Sault Ste. Marie	12							12					
Brant—													
Brantford	453		98	96	1200	300	108	2255	530	700	860		
Desbarats										40	15		
Ohsweken	26		6		12			44	50				
Paris						20		20	120	120			
St. George	12		12	12	30	5		77					
Bruce—													
Allenford											25		
Barrow Bay				1				1					
Chesley				12				12		10			
Elmwood										60	25		
Hepworth				6				6			20		
Kincardine				1	18			19			20		
Lucknow	12			12		10		34					
Mildmay	12			18	30		6	66	30				
Paisley									130				
Port Elgin				12	36	25	24	97	30				
Tara				12				12	10	60	10		
Teeswater						5		5					
Tiverton	4				6			10	20		25		
Walkerton	12		12	1		4	1	30					
Wiarton			6	8		10		24	30	60	45		
Carleton—													
Ashton				6		5		11			10		
Carp				4			18	22					
Ottawa	3409		48	70	96	5	54	3682	240	2730	3800		
Dufferin—													
Corbetton						5		5					
Grand Valley									10	55			
Orangeville	12				12	15	6	45			60		
Shelburne	60			2	72		6	140					
Dundas—													
Chesterville										60			
Morrisburg					12	25	24	61	55				
Newington					12		12	24					
Winchester	2							2					
Durham—													
Bethany						5	12	17					
Binbrook					48			48					
Bowmanville	62				96		96	254	50	275	135		
Enniskillen	6				78	5		89		20			
Franklin	4		4		6	5	6	25					
Garden Hill				6				6					
Millbrook	6		6	6	192	10	12	232	30				
Orono					54	10		64	10	20			
Port Hope			24	96		30	30	180	20	20	85		

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1921

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wasserman)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. of Injections
Elgin—													
St. Thomas									20	50	30		
Straffordville					18			18					
Essex—													
Amherstburg					12	5		17					
Kingsville				18	24	10	6	58					
Leamington	63		42	8	676		6	795	10	20			
Ojibway				27				27					
Tecumseh	6		6		12		6	30					
Windsor	800		600	1	576	500	36	2513	365	840	525		
Woodslee									10				
Frontenac—													
Kingston				72				72	720	420	245		
Verona										30			
Wolfe Island										70			
Glengarry—													
Alexandria	6		6		12			24	25	50			
Apple Hill						10		10					
Dalhousie Mills	6					5		11		10	10		
Dalkeith	6		6			5		17					
Dunvegan							12	12					
Maxville				25		15	72	112	20		10		
Williamstown					18	5		23					
Grenville—													
Kemptville	4							4	10	20	15		
North Augusta									20				
Prescott	24							24	20	10	50		
Grey—													
Chatsworth						5		5					
Clarksburg					6			6					
Dromore			4					4					
Dundalk			6				12	18			25		
Durham				24	6	5		35	40	20			
Flesherton							60	60			10		
Hanover				6	32	10	48	96	50	60	30		
Holstein				4				4					
Markdale				14	12	5		31					
Meaford				12	30		12	54	95	30			
Neustadt			6		18			24					
Owen Sound	204		78	12	1332	50	126	1802	340	1105	510		
Priceville									20				
Shallow Lake				6				6					
Thornbury			12					12					
Walter's Falls										30			
Woodford			2					2					
Haldimand—													
Canfield	3		3			5		11					
Cayuga									10				
Dunnville	24			18	102	15		159			80		
Fisherville					6	10	6	22					
Hagersville									10				
Jarvis				12	12			24					
Haliburton—													
Gelert	2		2		6	5	6	21					
Haliburton	60		36		60	55	30	241	20		70		
Minden			6	2	6	5	12	31	20		10		

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto, during the year 1921.

Municipalities	Outfits sent out								Doses of Typhoid paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. Injections
Halton—													
Acton	1	....	1	2	30	....	....	34	....	20	10	....	....
Bronte	....	....	....	2	....	....	....	2	....	....	....	....	....
Burlington	....	....	....	72	12	10	6	100	10	....	15	....	....
Georgetown	....	....	....	....	42	....	....	42	....	190	....	....	....
Milton	....	....	....	....	36	....	....	36	....	20	....	....	....
Oakville	6	....	....	8	6	....	12	32	....	10	....	....	....
Hastings—													
Bancroft	....	....	....	....	....	....	....	....	10	150	220	....	....
Belleville	52	....	....	48	2412	60	114	2686	80	....	....	....	....
Desoronto	1	....	18	....	....	20	....	39	....	....	55	....	....
Eldorado	9	....	3	....	....	20	....	32	....	....	....	....	....
Frankford	....	....	6	12	12	20	24	74	40	....	....	....	....
Glen Miller	12	....	....	1	....	....	....	13	....	....	....	....	....
Madoc	....	....	....	3	12	10	....	25	....	....	....	....	....
Marmora	....	....	....	18	18	10	....	46	....	60	....	....	....
Roslin	....	....	....	....	....	10	30	40	40	20	....	....	....
Sulphide	....	....	....	....	....	....	....	....	40	....	....	....	....
Trenton	24	....	24	2	36	35	36	157	145	365	80	....	....
Tweed	....	....	....	....	....	5	6	11	10	....	....	....	....
Huron—													
Brussels	....	....	....	2	....	....	....	2	....	....	....	....	....
Clinton	....	....	....	6	....	10	....	16	....	....	....	....	....
Crediton	....	....	....	....	....	....	....	....	....	25	....	....	....
Dashwood	....	....	....	....	....	....	....	....	....	140	....	....	....
Ethel	....	....	....	24	5	....	....	29	....	....	....	....	....
Exeter	....	....	....	10	....	....	....	10	....	....	....	....	....
Goderich	12	....	6	12	30	30	24	114	10	....	55	....	....
Gorrie	....	....	....	6	....	....	....	6	....	....	....	....	....
Seaforth	....	....	....	30	36	....	....	66	30	....	10	....	....
Wingham	....	....	4	....	12	10	30	56	....	....	....	....	....
Zurich	....	....	....	....	....	....	....	....	....	100	....	....	....
Kenora—													
North Pines	....	....	....	....	....	....	....	....	....	60	....	....	....
Kent—													
Blenheim	....	....	....	....	....	....	....	....	50	....	....	....	....
Chatham	72	....	....	204	96	115	60	547	255	60	470	....	....
Dresden	....	....	....	10	....	....	....	10	90	100	....	....	....
Merlin	....	....	....	19	....	....	....	19	....	....	....	....	....
Ridgetown	....	....	....	....	18	10	12	40	....	....	....	....	....
Tilbury	10	....	....	....	....	....	....	10	....	....	15	....	....
Wallaceburg	6	....	....	....	....	....	....	6	....	....	....	....	....
Lambton—													
Brigden	6	....	....	12	....	....	....	18	....	....	....	....	....
Camlachie	....	....	....	....	12	....	....	12	10	25	....	....	....
Forest	6	....	....	25	66	40	....	137	....	60	....	....	....
Inwood	....	....	....	....	12	....	....	12	....	....	....	....	....
Petrolia	6	....	....	....	12	5	....	23	10	30	50	....	....
Sarnia	72	....	30	24	48	40	66	280	220	50	355	....	....
Thamesville	....	....	....	....	....	5	....	5	....	....	10	....	....
Watford	....	....	....	12	24	10	24	70	20	25	5	....	....
Lanark—													
Almonte	24	....	....	....	25	24	120	193	....	....	....	....	....
Carleton Place	2	....	7	94	5	6	6	120	....	....	....	....	....
Dalhousie Lake	....	....	....	1	....	....	....	1	....	....	....	....	....

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto, during the year 1921

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. Injections
Lanark—*Cont.*													
Lanark									10				
Pakenham					36			36					
Perth	24				24		6	54					
Smith's Falls	36				126			162	55				
Leeds—													
Brockville	36				42	30		108	20	150	250		
Elgin					6			6					
Gananoque					48			48			60		
Lyn					24	25		49		40			
Lennox and Addington—													
Ernestown									10				
Napanee				42				42	70				
Lincoln—													
Beamsville	6		6	1	12			25	20	8			
Grimsby					72			72		200	15		
Jordan									200				
Merriton	3							3					
Niagara-on-the-Lake				4				4		70			
St. Catharines	556			11	552	75	30	1224	470	1020	615		
Smithville					18			18		35			
Manitoulin—													
Gore Bay						5		5					
Middlesex—													
London	1400		800		300	200	396	3096	1175	450	1195		
Parkhill					12	10		22			60		
Strathroy									40	30			
Muskoka and Parry Sound—													
Bala				6			12	18	40	40			
Bracebridge	18		12		18			48					
Burk's Falls							24	24		210	10		
Byng Inlet									10				
Depot Harbor					12	5	6	23					
Gravenhurst	12		12	29	12	20	12	97	10	20	5		
Huntsville	6			2		10		18		10			
Kearney									10		15		
Muskoka				2				2					
Pakesley				12	12	5	6	35	20				
Parry Sound	42		24	6	42	40	24	178	70	245	90		
Powassan	2				42	5		49	20				
South River	18				12			30					
Sprucedale	6					5		11			25		
Sundridge				16	12	10	24	62	40				
Torrance					6			6	10				
Trout Creek			6		12	5	6	29			185		
Utterson				12				12					
Nipissing—													
Algonquin Park					6			6					
North Bay	200							200		820			
Sturgeon Falls					72			72					
Norfolk—													
Delhi	18		6	20	18	10	6	78	40	50	35		
Langton					6			6					

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto, during the year 1921.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. Injections
Norfolk—*Cont.*													
Port Dover					24	5	5	34					
Port Rowan					12	5		17	50	30	35		
Simcoe	68			40	72	15	36	231	80	140	60		
Teeterville	6				6	5		17					
Waterford				6	18	15	12	51					
Northumberland													
Brighton	24				264			288	20	110	30		
Campbellford	24			21				45	20	600			
Castleton				5				5					
Cobourg	58		12	15	54	25	48	212	10	25	70		
Colborne					12	15	12	39	50				
Cold Springs										10			
Hastings	6			2				8		60	5		
Roseneath				6	18		12	36	20	20			
Warkworth									30	90			
Wooler					6			6					
Ontario—													
Beaverton					42	10	12	64			60		
Brechin				13		5		18					
Cannington										20			
Claremont			6		30	10		46		25	5		
Oshawa	274			58	1392	90	72	1886		540	60		
Pickering						5		5					
Port Whitby				2				2					
Seagrave				1				1					
Sunderland				1	12			13	60	60			
Uxbridge	2		2	28	6	5	6	49					
Whitby	60		6	33		10		109					
Oxford—													
Drumbo				6	12	15		33		40			
Embro				2				2		40			
Norwich										20			
Otterville					6	10		16	30	50			
Tillsonburg	42		6		258	10	36	352	20	20			
Woodstock	12				36	55	12	115	30	40			
Peel—													
Alton					48			48	10	30	15		
Bolton						10		10					
Brampton	4			39	48			91		20			
Caledon				4		20		24					
Clarkson						5		5		35	15		
Forks of Credit				1				1					
Inglewood					30			30			10		
Lorne Park				1				1					
Meadowvale				1				1					
Palgrave						15	24	39			55		
Port Credit				5	6	10		21		25			
Streetsville					6			6					
Perth—													
Atwood				1				1	25		10		
Listowel	6			12		20	12	60					
Mitchell	18		4	12		5	12	51	75	55	30		
St. Mary's									30				
Sebringville				1				1					
Stratford	98			12	30	55	12	207		110	305		

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto, during the year 1921.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. Injections
Peterboro—													
Bailieboro	24			8	18			50	170	60	20		
Havelock			12	28				40		90			
Keene	12				24			36	10		35		
Peterboro	128		50	13	1562	70	72	1895	250	905	460		
Prescott—													
Alfred Station				4				4	50	120			
Fournier			12					12		50			
Hawkesbury					6	5	6	17		45	25		
St. Isadore-de-Prescott	7		1	6	24	15	18	71	40	30	75		
Prince Edward —													
Hillier					36	5		41					
Picton	66			12	6	10	6	100		60			
Rainy River—													
Emo										25	75		
Fort Frances	6						6	12			15		
Stratton									50				
Renfrew—													
Arnprior					6	5		11					
Beachburg										40			
Cobden	24		24		234	5	6	293	60	30			
Eganville						10	12	22		60	70		
Forester's Falls							6	6					
Pembroke	24			48			6	78		120			
Renfrew	12							12			30		
Russell—													
Bourget			12			5		17	80	30	180		
Casselman				6				6					
Clarence Creek				18				18					
Cumberland										50	30		
Embrun						25		25					
Metcalfe					24	5		29		100	15		
Osgoode					6	5		11					
Rockland				4				4		25	5		
Russell						10		10	20				
Vars	6			6	12	5	12	41		30	15		
Simcoe—													
Allandale				2				2					
Alliston	8			5	12	5	60	90		20	10		
Angus					12			12					
Barrie	2			25	174	20	6	227	85	110	115		
Beeton	6							6					
Bondhead					12			12		20			
Bradford	5		5			5		15					
Camp Borden	6							6	50				
Coldwater	6				6	15	6	33			60		
Collingwood	106		56	6	72			240	120	70	135		
Cookstown				1				1					
Craigvale				24				24					
Creemore	12				84	20		116					
Everett				9	6	5		20			5		
Midland	118							118	40	60			
Orillia	48		12	139	252	35	72	558	690				
Penetanguishene	12		6		24	25	6	73					
Stayner				1				1	10	50	10		

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1921

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. of Injections
Simcoe—*Cont.*													
Stroud					24			24					
Victoria Harbor	12		18	2	6	5	6	49	10				
Waubaushene											30		
Stormont—													
Aultsville									20				
Cornwall	18				12	5		35	30	30			
Crysler										190			
Finch									20	70			
Mille Roches									10				
Moose Creek						30	6	36					
Sudbury—													
Burwash	1926		150			30		2106					
Capreol				18				18					
Chapleau	12		12		24	10		58					
Chelmsford									10	20	10		
Copper Cliff	24			60		25		109	50				
Espanola	12			30		10		52					
Sudbury	108			27	48	10	5	198	170		10		
Warren									20				
Webbwood	12				6			18			30		
Thunder Bay—													
Fort William									750	810	545		
Nipigon									10	10	5		
Timiskaming—													
Cobalt	12			12	60	5		89	50		60		
Cochrane	78				48	40	24	190	60	200	120		
Elk Lake											30		
Englehart										300			
Gowganda	6							6		20			
Haileybury	4		18	22		10		54					
Hearst				12	24		24	60			100		
Iroquois Falls	12						6	18	30	30			
Kapuskasing	12		12		12		12	48	150				
Larder Lake	12			4				16	20				
Matheson									770				
Monteith				1				1					
Nellie Lake				3				3					
New Liskeard	24							24	90	150	80		
No th Cobalt						5		5					
Schumacher	12					10	12	34					
SmoothRockFalls									50	10			
South Porcupine	48			24	12	20		104					
Timmins	26		21		12	10	18	87		20			
Victoria—													
Bobcaygeon	12			1	36	5		54			125		
Coboconk					18			18		30	15		
Fenelon Falls				3	6	5	6	20		20			
Kinmount					18			18					
Kirkfield				22				22					
Lindsay	4			24	12	25		65					
Little Britain					24	20		44					
Manilla				4	144	50	60	258					
Omemee	12				30	15	18	75		90			
Woodville						5		5					
Waterloo—													
Ayr			6	12	12	5	24	59	35	50			
Elmira	3		6	1	12	20		42					

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1921.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. of Injections
Waterloo—*Cont.*													
Galt	98		72	61	120	80	30	461		40	385		
Hespeler	16			16	12	5		49					
Kitchener	120		48	30	672	200	24	1094	40	600	420		
Linwood					6	10		16					
New Dundee						5		5	20				
New Hamburg	50				42		6	98	10				
Preston	6			2	36	5		49		30	60		
Waterloo	18		24		24		18	84		140	15		
Wellesley									10				
Welland—													
Bridgeburg				8	78	5	36	127	20				
Crystal Beach	6		6	40	12	10	12	86			10		
Fenwick				12	12			24	20	135	30		
Fonthill				1				1					
Marshville							6	6					
Niagara Falls	462		157	175	36	30	60	920	200	50	280		
Port Colborne	12		6		42	15		75	145	10	110		
Ridgeway	4			24		20	6	54	20	20			
Thorold	12							12	20	110	45		
Welland	236		16	6	24	15	12	311		180	230		
Wellington—													
Arthur	6			18				24					
Belwood					12		6	18					
Clifford	6		12	6	6	5	6	41					
Drayton	24				24		30	78	20		15		
Erin						5		5					
Fergus	6			2	6	5	6	25	30	40	55		
Glen Allen									25				
Guelph	713		42	238	510	75	54	1632	170	550	230		
Harriston	72		12		24	5		113		35	30		
Hillsburg				14				14	20	80			
Morriston							6	6					
Mount Forest					6	15	6	27	10				
Palmerston	12							12			35		
Rockwood					24			24			10		
Wentworth—													
Ancaster				2				2					
Bartonville					144			144					
Dundas	6							6					
Freelton										40			
Hamilton	176		12	10		5		203	2390	2280	2720		
Lynden	6			2		10		18			60		
Stoney Creek				26				26					
York—													
Agincourt	13			25	24	20		82	50	10	30		
Aurora	6		12	12	40			70					
Concord				2				2					
Fairbank					216			216					
Frederickton									10				
Islington				8				8					
Keswick				2				2		60			
King									20				
Long Branch				2	12			14					
Maple				1				1					
Markham				15				15					
Mimico	24				2424	5		2453	600	60			

YEARLY REPORT

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1921.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Palida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	No. of Injections
York—*Continued*													
Mimico Beach	12				36		6	54					
Mount Albert					24	5		29			10		
Mount Dennis	6				7	5		18					
Newmarket					6	5		11	50	170			
Newtonbrook				3				3					
New Toronto	12			6	246			264	25	170			
Pefferlaw				1	12		6	19					
Queensville					72	10	12	94					
Richmond Hill	6		6	7		10	6	35			50		
Roaches Point				3				3					
Schomberg	36					10		46					
Stouffville	6					5		11					
Sutton West	10		4	1	12			27	20	20			
Thornhill				2	8		6	16					
Todmorden				2				2					
Toronto	9491		2308	242	22392	250	2850	37533	3195	10008	1265	4	96
Unionville				1				1	10	25			
Weston	16			31	90	20		157	20	150			
Woodbridge										25	5		
Totals	23,540		5,228	3,526	42,746	4,209	6,065	85,314	18,430	33,473	20,185	4	96

Grand Total—93,298.

TABULATED REPORT

of the work of the

BRANCH LABORATORIES

at Kingston, London, Fort William, Sault Ste. Marie and
North Bay, for the year 1921.

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculosis Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−	Colloidal Gold Reaction	Very strongly Positive	Strongly Positive	+	−	+	−
Bruce—															
Paisley						1		3							
Carleton—															
Metcalfe				1											
Ottawa				1			6	2		24	7		119		
Richmond					1			1							
Stittsville					1	2									
Dundas—															
Chesterville				6		7		3					6		
Iroquois						1							1		
Winchester					1	4		5		1					
Durham—															
Port Hope						1									
Essex—															
Essex							3	1							
Frontenac—															
Collin's Bay				1				1							
Glenburnie															
Harrowsmith				2	1	2									
Kingston	75	428	59	618	46	660	47	147		96	23	4	764		
Portsmouth	7	10	5	17		1	6	19		4		1	52		
Sharbot Lake				3	1	4	3	1		1			3		
Sydenham			1	1		3									
Verona		1		3			3	3							
Wolfe Island				2		1		1							
Glengarry—															
Lancaster			3										1		
Maxville				2	2	3		3					1		
Williamstown						1		2							
Grenville—															
Cardinal			1	6		4	3	3					2		
Jasper			1	1			1	3							
Kemptville					1	1	2	4							
North Augusta	1		1	3											
Prescott			1			1	1								
Hastings—															
Bancroft					1	2	1	3							
Belleville	5	11	45	362	9	33	33	60		1		1	11		
Deseronto				1		1		2							
Eldorado							2	4							
Foxboro'		1	3	9											
Frankford								1							
Marlbank						1									
Roslin						1									
Shannonville					1	1	1	9							
Stirling								1							
Trenton						2									
Tweed			1	2	7	3		3							
Huron—															
Wingham								1							
Lanark—															
Almonte				2						2					
Carleton Place				3	1	3	2	12					3		
Lanark							1								
McDonald's Cnr.							1	1							
Pakenham															
Perth			1	4	1	4				1			1		
Smith's Falls	1	1	3	11	4	18	9	22			1		5		

ONTARIO AT KINGSTON, FOR THE YEAR 1921.—SPECIMENS EXAMINED.

Gonorrhea +	Gonorrhea −	Rabies Diagnosis Animal	Rabies Diagnosis Negri Bodies +	Rabies Diagnosis Negri Bodies −	Rabies Diagnosis Animal Inoculations	Milk Food Content Fats	Milk Food Content Total Solids	Milk Preserv-atives +	Milk Preserv-atives −	Milk Bacteriological Tubercle Bac. +	Milk Bacteriological Tubercle Bac. −	Milk Bacteriological Pus Cells +	Milk Bacteriological Pus Cells −	Milk Count	Milk Extraneous Matter	Number of Milk Samples	Waters Chemical	Waters Bacterial	Liquors for License Department	Miscellaneous Specimens	Total for Year
																					4
																					1
26	47																			3	235
																					2
																					3
	2																			2	26
																					2
	2																			2	15
																					1
																					4
																		3			5
																		2			2
1																				2	8
15	52																	447		217	3698
	5																12	110			249
2																					18
2	1																				8
																					10
																					4
																	2	1		2	9
																					11
																					3
																				1	20
																					6
																	21	12			41
																		23			28
																	3	6			12
																					7
1	3																	9		4	588
																		2		1	7
1	1																	2		1	11
	1																				14
																					1
																					1
																					12
																		1			2
																					2
1																	5	2			24
																					1
																					4
																				1	25
																					1
																					2
																				1	1
																				1	13
	3																	18		2	98

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculosis Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	−	+	−
Leeds—															
Athens															
Brockville		3		1	2	10	3	9		2	1	2	24		
Delta						2		1					2		
Gananoque	15	19	6	10	4	3	6	5		1			3		
Lansdowne			1		1	4	1								
Mallorytown				3		1							1		
Seeley's Bay	6	23	4	8				1							
Westport				1											
Lennox and Addington—															
Adolphustown						5									
Bath			1	3		2									
Enterprise			1												
Flinton						1		7					1		
Moscow								1							
Napanee	1	3	10	12	4	7	4	22		1			6		
Odessa							1	3							
Tamworth	2		1	2											
Yarker		1		1				5							
Northumberland—															
Brighton															
Campbellford						6		1				1	2		
Cobourg													3		
Colborne				2	1	9	9	8							
Prescott—															
Fournier	1	1		2	1	4	1	1							
Prince Edward—															
Consecon															
Picton					2	5	1								
Renfrew—															
Arnprior				7	1	3	1	2							
Calabogie						1									
Cobden	12	32	11	36		4									
Hyndford						1									
Pembroke					1	13	1	3							
Petawawa										1			4		
Renfrew				3	3	4		7		1			5		
Westmeath						1	3	3					1		
Simcoe—															
Barrie								2							
Stormont—															
Aultsville															
Cornwall	1		4	8	10	7	6	11		6			12		
Dickinson's Ldg	3			1									1		
Finch				1		1		2		1					
Mille Roches				1											
Moose Creek			1	2		3		3							
Newington				1											
Victoria—															
Lindsay										1			4		
Wellington—															
Guelph						5									
Grand Total	130	534	165	1166	108	868	162	418		144	32	9	1038		

ONTARIO AT KINGSTON, FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological											
										Tubercle Bac		Pus Cells									
+	−	Animal	+	−	Animal Inoculations	Fats	Total Solids	+	−	+	−	+	−	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
																		3			3
																	7	7			71
1	2																				8
																		5			77
																		3		1	11
																	1	2			8
																		2		1	45
																					1
																					5
																					6
																					1
1																		2			12
																					1
1	1																9	13		2	96
																		1			5
																					5
																					7
																	2			1	3
																				1	11
																					3
																		9		1	39
2	3																				16
																				16	16
																		2		2	12
1	2																			4	21
																					1
																		5		3	103
																					1
																			3		21
																				1	6
																			2		25
																					8
																					2
																		1			1
2	6																	3		1	77
																					5
																					5
																					1
																					9
																					1
																					5
																					5
57	131																62	696	5	274	5999

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−	Colloidal Gold Reaction	Very strongly Positive	Strongly Positive	+	−	+	−
Algoma—															
Foleyet			....	....	....	....	....			....	....	....	3	....	....
Brant—															
Brantford	....	....	....	....	....	2	....	1		12	4	4	64	....	....
Paris	....		....	....	....	6		1		1	....	....	4	....	....
Bruce—															
Allenford	....	....	....	....		4	....		....	....	....	....	....	....	....
Cargill	....	....	....	....	....	2			....	....	....	....		....	....
Hepworth	1	1	....	11	....	1	....		....	....	....	....	2	....	....
Kincardine	....	....	....	....	1	5	....	2	....	1	....	....	1	....	....
Lucknow	....	....	....	....	4	1	....	....	....	....	....	....	....	....	....
Mildmay	2	....	....	....	....	....	1	1	....	....	....	....	....	....	....
Paisley	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Teeswater	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....
Walkerton	....	....	....	....	1	5	....	....	....	3	....	....	1	....	....
Wiarton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Carleton—															
Ottawa	....	....	....	....	....	....	....	2	10	4	....	1	8	....	....
Durham—															
Cobourg	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Millbrook	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Elgin—															
Aylmer	....	....	1	....	....	2	....	....	....	4	....	....	2	....	....
Dutton	....	....	....	1	....	1	....	1	....	....	....	....	2	....	....
Harrietsville	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Lawrence Sta.	....	3	1	2	....		....	....	....	....	....	....	2	....	....
Port Stanley	....	....	....	....	....	1	....	....	....	1	....	....	2	....	....
Shedden	....	....	1	6	....	1	....	....	....	....	....	....	....	....	....
Springfield	....	....	....	....	....	2	....	....	....	....	....	....	1	....	....
St. Thomas	....	....	1	1	....	2	....	....	....	20	6	1	49	....	....
Wallacetown	....	....	....	....	....	3	....	1	....	....	....	....	....	....	....
West Lorne	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....
Essex—															
Amherstburg	5	1	2	73	....	....	....	....	....	2	....	....	6	....	....
Belle River	....	....	....	....	....	1	....	....	....	1	....	....	2	....	....
Comber	....	....	....	....	....	3	....	1	....	....	....	....	....	....	....
Essex	....	1	....	....	....	....	....	....	....	....	....	....	1	....	....
Harrow	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Kingsville	1	....	....	14	....	3	....	2	....	....	....	....	3	....	....
Leamington	1	....	1	2	....	1	1	....	....	2	....	....	5	....	....
Stony Point	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Tilbury	....	....	....	....	....	1	....	1	....	....	....	1	2	....	....
Walkerville	....	....	....	....	....	....	....	....	....	6	....	....	22	....	....
Windsor	....	....	....	....	....	....	....	....	....	76	16	7	223	....	....
Grey—															
Hanover	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Shallow Lake	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
Haldimand															
Dunnville	....	4	1	2	....	1	....	1	....	....	....	....	....	....	....
Huron—															
Bayfield	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Clinton	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Crediton	....	4	....	6	1	1	....	....	....	....	....	....	....	....	....
Dashwood	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....
Ethel	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....
Exeter	....	4	2	4	1	4	....	2	....	....	....	....	2	....	....
Glen Annan	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

ONTARIO AT LONDON FOR THE YEAR 1921.—SPECIMENS EXAMINED.

Gonorrhea +	Gonorrhea −	Rabies Diagnosis Animal	Rabies Diagnosis Negri Bodies +	Rabies Diagnosis Negri Bodies −	Rabies Diagnosis Animal Inoculations	Milk Food Content Fats	Milk Food Content Total Solids	Milk Preservatives —	Milk Preservatives —	Milk Bacteriological Tubercle Bac. +	Milk Bacteriological Tubercle Bac. −	Milk Bacteriological Pus Cells +	Milk Bacteriological Pus Cells −	Milk Bacteriological Count	Milk Extraneous Matter	Milk Number of Milk Samples	Waters Chemical	Waters Bacterial	Liquors for License Department	Miscellaneous Specimens	Total for Year
																					3
																				4	91
1	1																				14
																					4
																					2
																	16	18			50
																				1	11
																	23	23			51
																					4
	1																				1
																					2
1	1																				12
																	2	2			4
																				1	26
																					1
																				6	6
	4																33	36			82
																				1	6
																	4	4			9
																					8
																				1	5
																					8
																					3
																				8	88
																	14	14		2	34
	1																2	2		2	9
																					89
																					4
																				1	5
						3								3			14	14			36
																	2	2			5
	1																				24
																		1			14
																	8	8			16
1	1					1	1		1					1							11
																					28
																				3	325
																	5	5			10
																					1
																				1	10
																					1
																	2	2		1	6
																	1	1			14
																					2
																					4
	1																1	1			22
																				1	1

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−	Colloidal Gold React'	Very strongly Positive	Strongly Positive	+	−	+	−
Goderich		2	2	7	1	8	1	4					1		
Hensall				6		9				1					
Kirkton	1	7	2	1		3	1						2		
Seaforth		20	7	13	1	1	2	6					1		
Wingham				5	2	17	2	1							
Zurich		1		1	1	21	1			1					
Kent—															
Blenheim					5	11	2	6		3			7		
Chatham	2	6	5	19	18	36	3	8		8	1	1	37		
Dresden			1		1	4	1	2	2	1			1		
Duart				2	1	3									
Harwich															
Highgate	1					2		1					1		
Merlin		2		9		6	1	1		1			12		
Ridgetown	8	2	8	45	3	19		7					5		
Thamesville		1	1	10		11	1	10		1	1		3		
Tupperville										1			6		
Wallaceburg	1			2		7				6	2		14		
Wheatley				5				2		1					
Lambton—															
Alvinston						1	1								
Arkona			1	2									1		
Brigden															
Camlachie		5	1	8		5		5							
Courtright						1									
Florence						1									
Forest		9	3	30		7	1	2		1	1		1		
Inwood				1		1							2		
Mooretown															
Oil Springs						1									
Petrolia	2	5		10	1	7									
Port Lambton								1							
Sarnia	1	4	17	55	5	22	5	14		22	3		69		
Thedford		1		2		2	2	4					1		
Watford				7		3		4					2		
Wyoming	1							2							
Lincoln—															
Niagara-on-the Lake													2		
St. Catharines															
Middlesex—															
Adelaide						2							1		
Ailsa Craig				1				1							
Arva		6	1												
Belmont			1	3		1							1		
Byron						14			1	16	1		36		
Dorchester			1	6	1	9	3	10		2			1		
Glencoe	1	3	2	1	1	1									
Granton	4	5	4	15	2	3	3	5							
Hyde Park										1	2	2	16		
Komoka						1									
Lambeth					1	8							2		
London	428	795	267	1252	98	335	102	161	166	307	61	114	1200		
Lucan	7	2	7	28		3	1	4							
Melbourne						2		4							
Mt. Brydges	3	9	3	21	1	3							3		

ONTARIO AT LONDON FOR THE YEAR 1921.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
		Animal	Negri Bodies		Animal Inoculations	Food Content		Preservatives		Bacteriological					Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
+	−		+	−		Fats	Total Solids	+	−	Tubercle Bac.		Pus Cells		Count							
										+	−	+	−								
2	3					37								27			13	12		5	125
																	1			1	18
																	1	1			19
																	11	6		2	70
	5																1	1		1	35
																				2	28
																	2	2		1	39
6	3																	133		6	292
																					13
																				1	7
																				1	1
																				2	7
																	1	1			34
																	4	4		5	110
2																				3	44
	1																				8
	3					5								4			3	3		1	51
																					8
																	8	8			18
																					4
																	5	7			12
																	1	1			26
																				1	2
																					1
1																	2	2		3	63
																					4
																	3	3			6
																				1	2
																					25
	1																				2
7	13					13								27			25	22		9	333
1	1																			2	16
																	26	26		3	72
																					3
																					.....
																					2
																				3	3
																					3
																					2
																					7
																				1	7
														13						13	94
					1															4	38
																	1	1		1	12
																	3	3			47
	1																				22
																	10	10			21
																	1	1		4	17
65	185					872								1175			34	188	8	437	8250
																					52
																	1	1		3	11
	1																2	5		7	58

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−		Very Strongly Positive	Strongly Positive	+	−	+	−
Newbury				1	2	4	1	4							
Parkhill		2		2	1	1		5					1		
St. John's		1	1												
Strathroy				4	1	14		2	1	1			4		
Thorndale		2	1	14	2	9		4							
Wardsville					1	5							2		
Nissouri W.															
Nipissing															
North Bay												1	3		
Norfolk															
Courtland						6		4			1				
Delhi				1											
Northumberland															
Campbellford															
Ontario															
Whitby								1	5	6	1	1	41		
Oxford															
Brownsville						4		1							
Burgessville				4											
Ingersoll	4	16	7	52	4	22	6	13		8	1		17		
Innerkip				3	2	3									
akeside	3	14	5	2		1		1							
Mt. Elgin	1	12	1	5			1	1							
Plattsville															
Springford											1				
Tavistock						1				1		1			
Thamesford				6	1	6	1	4							
Tillsonburg						2		1		1			1		
Woodstock	2	9	5	30	4	28	1		1	6			22		
Perth															
Listowell	1	2	1	2		4	2	9	2				6		
Mitchell		2		2		4							4		
Sebringville	1			6		2		2					1		
Stratford	1	3	2	22	9	31	2	2	5	19	2	1	46		
St. Mary's			1	12	1	11	3	7		1			2		
Peterboro															
Peterboro	2			1	1	1	1	2		1			6		
Simcoe															
Collinwood										1					
Camp Borden													1		
Stormont															
Cornwall					1										
Waterloo															
Ayr		1		5											
Baden		1		3											
Galt	1				1	9	1	4	1	1	1		5		
Kitchener	3	20	2	26	9	18		4	1	34	6		160		
New Dundee					1	1	1								
New Hamburg			1	2											
Waterloo	2					1	1	4					1		
Wellesley				1	1	7		1							

ONTARIO AT LONDON FOR THE YEAR 1921.—SPECIMENS EXAMINED—*Con.*

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Contents		Preservatives		Bacteriological											
										Tubercle Bac.		Pus Cells									
+	–	Animal	+	–	Animal Inoculations	Fats	Total Solids	+	–	+	–	+	–	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	14
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	9	...	1	20
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...	9	42
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	35
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	85
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	8	...	4	180
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	22
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	...	...	5
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	3	23
...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	2	14
...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18	18	...	8	155
...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18	18	...	6	73
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	10	24
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	15
11	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	182
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	4	45
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	17
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...	3	34
1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	18	306
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	9	...	...	28

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculosis Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−		Very Strongly Positive	Strongly Positive	+	−	+	−
Wellington															
Alma	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Glenallen	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Guelph	....	....	....	1	....	7	2	2	37	42	3	5	89	....	....
Harriston	....	2	1	2	....	....	....	....	....	....	....	....	....	....	....
Moorefield	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mount Forest	....	....	....	....	....	1	....	....	....	1	....	....	6	....	....
Welland															
Niagara Falls	....	....	....	....	....	....	....	....	....	....	....	....	1		....
Wentworth															
Lynden	....	....	....	5	....	1	....	....	....	....	....	....	....	....	....
York															
Toronto	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....
Grand Total	491	1009	373	1905	193	852	158	360	232	630	114	140	2258	....	....

ONTARIO AT LONDON FOR THE YEAR 1921.—SPECIMENS EXAMINED. *Con.*

Gonorrhea		Rabies Diagnosis				Milk											Water		Liquors for License Department	Miscellaneous Specimens.	Total for Year
		Animal	Negri Bodies		Animal Inoculation	Food Conten		Preservatives		Bacteriological					Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
						Fats	Total Solids			Tubercle Bac.		Pus Cells		Count							
+	—		+	—				+	—	+	—	+	—								
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	1	2
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	1	1
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	4	192
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	1	6
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	1	1	...	....	2
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	....	8
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	....	1
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	1	7
..	..	....	....	....	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	....	2
101	258	....	....	....	1	932	1	..	1	...	...	...	...	1250	...	....	371	659	8	655	12,592

Numbers in miscellaneous column include:—Free urines, gastric contents and chemical miscellaneous samples; Division of Chemistry and Exudates, blood counts, blood cultures, Vaccines and free tissue examinations Division of Pathology.

Approved

H. W. HILL
Director

Laboratories, Fort William, January 27th, 1922.

Dr. J. W. S. McCullough, D.P.H.,
Chief Officer of Health,
Spadina House, Spadina Crescent.
Toronto, Ontario.

SIR.—I have the honour to submit herewith summarized report of the work done in this laboratory during the year 1921. It is noteworthy that substantial increases have been made in all departments over the previous year, showing that the district physicians as well as the city physicians are co-operating with the local health officers and the board in protecting the health of the community from infectious diseases and curtailing the spread of venereal diseases. Since the venereal clinic has been established here, the serological work has increased considerably; further it is pointed out that we now have a good system for early diagnosis of suspected syphilitic sores in that these cases are sent into the laboratory immediately and a dark field examination made: during one week last fall 3 diagnoses were made in this way before the Wassermann was positive and, since the cases have had vigorous anti-syphilitic treatment, the Wassermann has remained negative in these cases and in subsequent cases; we believe that these cases represent cures although time alone will tell; yet we are convinced that if all fresh cases could be handled in this way the millennium might be reached as regards syphilis, in that this scourge might be finally wiped out.

Special mention might be made with regard to water analysis. Dr. G. L. Sparks, our district health officer has put forth unceasing effort in urging the municipalities to have repeated analyses of their water supply made at regular intervals. Nearly 400 analyses have been made during the year, indicating in a specific way the interest he has aroused in the community regarding the importance of a sanitary water supply.

Sterile containers were prepared and sent out from this laboratory for all the specimens examined during the year.

All of which is respectfully submitted.

Faithfully yours,

M. O. THOMAS,
Director of Laboratory.

Diphtheria(swabs)		688
Release from quarantine		
Positive	97	
Negative	140	
Diagnosis		
Positive	101	
Negative	350	
Tuberculosis (sputum)		347
Positive	54	
Negative	293	
Typhoid (Widal-blood test)		77
Positive	27	
Negative	50	
Syphilis:—		
Colloidal gold test		16
Wasserman test		886
Very strongly positive	151	
Strongly positive	13	
Positive	20	
Negative	702	
Treponema pallida (dark field exam.)		13
Positive	7	
Negative	6	
Gonorrhea		266
Positive	75	
Negative	191	
Rabies (cases inoculated)		1
Milk analyses		334
Fat content	326	
Total solids	1	
Preservatives	2	
Bacteriological count	5	
Water analyses (bacteriological)		390
Miscellaneous specimens		611
Total for year 1921 (Fort William Lab.)		3,629

In addition biological products have been distributed from this laboratory throughout this district as follows:

Diphtheria antitoxin	5,195,000 units.
Tetanus antitoxin	65,000 units.
Antimeningitis serum	10 vials.
Smallpox vaccine	7,250 points.
Typhoid vaccine	55 bottles.
Influenza vaccine	25 bottles.
Pertussis vaccine	80 bottles.
Silver nitrate ampules	85 boxes.

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Colloidal Gold Reaction	Wassermann Reaction				Treponema Pallida	
	+	—	+	—	+	—	+	—		Very strongly Positive	Strongly Positive	+	—	+	—
Cameron Falls				1	1	1				3			2		
Chapleau			1												
Dryden				1											
Emo							1								
Foleyet				4									2		
Fort Frances				6	3	12	3	1		2	1		8		
Fort William	80	93	56	140	42	236	18	32	10	106	6	10	534	5	6
Hornepayne													1		
Hymers															
Ignace	1	13	4	47											
Jellicoe				4											
Keewatin	1		1	5		1	4	6		4			7		
Kenora						2									
Murillo															
Neebing				2											
Nipigon				2	1			1							
Port Arthur	4	5	20	51	6	39	1	9	6	28	6	10	116	2	
Rainy River		12	7	39	1										
Schreiber				4											
Sandpoint										3			13		
Sioux Lookout	11	12	8	39		1				5			19		
Stratton		5	4	5		1		1							
Total	97	140	101	350	54	293	27	50	16	151	13	20	702	7	6

ONTARIO AT FORT WILLIAM, FOR YEAR 1921.—SPECIMENS EXAMINED.

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
		Animal	Negri Bodies		Animal Inoculations	Food Content		Preservatives		Bacteriological					Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
										Tubercle Bac.		Pus Cells		Count							
+	−		+	−		Fats	Total Solids	+	−	+	−	+	−								
..	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	9	26
..	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
..	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	1	8
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..	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
..	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	45
60	182	...			...	221	1	...	2	...	...	...	...	2	221	226	...	37	...	430	2756
1	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	8
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	2
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	65
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	...	...	50
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	50	...	...	52
..	.	...	...	...	...	26	...	...	...	...	...	...	...	...	25	26	...	...	...	...	77
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...	...	16
..	..	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	28	...	...	34
5	4	...	...	...	1	78	...	...	...	...	...	...	...	2	72	80	...	86	...	160	791
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	9	...	...	68
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	97	...	...	101
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
8	3	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	10	119
..	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	...	1	27
75	191	...	...	...	1	326	1	...	2	...	...	...	...	5	318	334	...	390	...	611	3629

Certified correct
N. O. Thomas, M.B.

Director

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Spirochaeta Pallida	
	+	−	+	−	+	−	+	−	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	−	+	−
Algoma—															
Blind River			2	2						1	1				
Bruce Mines		1	4	2	1		1						1		
Cutler			1	1	1										
Desbarats	35	54	26	71	1	5		1		1	2		4		
Franz			7	8											
Hearst			1	1											
Hilton															
Hilton Beach				2											
Korah															
Neevish															
Nesterville				1			1						1		
Prince															
Richards Ldg.	1	1	1	5		1									
Sault Ste Marie	176	265	245	625	25	97		13	4	64	59	19	182	4	4
Searchmount			3	2											
Spragge															
Steelton															
Tarentorus					1										
Thessalon	2	1	1							1					
Manitoulin—															
Gore Bay			1												
Sudbury—															
Chelmsford															
Espanola			1		1										
Massey															
Sudbury													1		
Webbwood			2	1			1	1							
	214	322	295	721	30	93	3	15	4	67	62	19	189	4	4

ONTARIO AT SAULT STE. MARIE, FOR YEAR 1921.—SPECIMENS EXAMINED.

Gonorrhea +	Gonorrhea —	Rabies Diagnosis: Animal	Rabies Diagnosis: Negri Bodies +	Rabies Diagnosis: Negri Bodies —	Rabies Diagnosis: Animal Inoculations	Milk: Food Content: Fats	Milk: Food Content: Total Solids	Milk: Preservatives +	Milk: Preservatives —	Milk: Bacteriological: Tubercle Bac +	Milk: Bacteriological: Tubercle Bac —	Milk: Bacteriological: Pus Cells +	Milk: Bacteriological: Pus Cells —	Milk: Count	Milk: Extraneous Matter	Milk: Number of Milk Samples	Waters: Chemical	Waters: Bacterial	Liquors for License Department	Miscellaneous Specimens	Total for Year
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	7
4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	7	...	3	225
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	7	...	...	17
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	11	...	2	33
91	67	...	...	...	...	243	243	4	4	...	17	...	1	479	41	426	345	1339	...	685	5757
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	5	...	...	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...	...	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
3	1	...	...	...	...	2	2	...	...	...	...	...	...	2	...	2	6	6	...	...	12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
98	69	...	...	...	...	245	245	4	4	...	17	...	1	481	41	428	393	1383	...	707	6158

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheretic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis						
	Release		Diagnosis						Wassermann Reaction					Treponem Pallida	
	+	−	+	−	+	−	+	−	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	−	+	−
Algoma—															
Hearst				1											
Gogama	1	2				1									
Manitoulin—															
Gore Bay													1		
Little Current	2	7	3	1											
Manitowaning															
Nipissing—															
Field		1													
Garson Mines						1									
Mattawa					1	1									
Milnet															1
North Bay	84	136	40	81	21	74	19	12		25	6	15	100		
Sturgeon Falls	14	30	9	6	4	5	3	1		1		1			
Parry Sound—															
Burk's Falls	30	72	29	90			1								
Callander										1			1		
Kearney							1								
Magnetawan															
Pickerel															
Powassan	19	28	12	26									1		
South River	1	7		16											
Sundridge	11	12	3	8	3	2		3		1			1		
Sudbury—															
Capreol		1	2	3						1					
Chapleau		2	1	4											
Coniston														3	
Copper Cliff			1	1											
Espanola															
Sudbury	1	1	1	1	1	6	1	1		11	4	2	38		
Worthington													1		
Temiskaming															
Cobalt	2	3	2	11	1	9		3		3			7		
Cochrane								2	1	2			7		
Englehart			1	2	1	2	1						2		
Gowganda					1								1		
Haileybury		1	3	3	6	7	7	2		2			4		
Iroquois Falls				1	1		2	3							
Kapuskasing							4								
Kirkland Lake							1								
Matheson															
Monteith				1											
New Liskeard	2	2	1	1	6	3	3	1		2		1	4		
Schumacher					1	3				1			2		
Smooth Rock Falls															
South Porcupine				2									1		
Swastika															
Timmins			1	1	3	9	19	3		3	1	1	13		
	167	305	110	259	50	124	61	31	1	53	11	20	187		1

ONTARIO AT NORTH BAY FOR THE YEAR 1921.-SPECIMENS EXAMINED.

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
		Animal	Negri Bodies		Animal Inoculations	Food Content		Preservatives		Bacteriological					Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
										Tubercle Bac		Pus Cells		Count							
+	−		+	−		Fats	Total Solids	+	−	+	−	+	−								
																					1
																					4
																					1
																		7			20
																		5			5
																					1
																					1
																					2
																		4			4
	34	68														53		184		7	960
		20																4			98
																				3	225
																					2
																					1
																		2			2
																		4			4
																					86
																					24
		1																13			58
																		28			35
																					7
																					3
		1																57			60
																		12			12
	2	5																56		2	133
																					1
	2																	24			67
																		19			32
		1																			10
																					2
	4	17																23		1	80
																					7
																		9			13
																					1
																		3			3
														1							1
	2	2														1				3	34
	1																	4			12
																2		9			11
		4																			7
																1					1
	2	6																15			77
	47	125												1		57		482		16	2108

ANNUAL REPORT, DIVISION OF INDUSTRIAL HYGIENE.

Progress in the field of industrial hygiene seems to rest primarily on two things:

(1) Close co-operation between plant health service and *adequate* municipal health service.

(2) The establishment by employers of plant health service, either individually or in groups, under trained health officers, for the prevention of sickness in industry.

With reference to the first point, a part-time health officer finds himself unable to provide the type of municipal health service required for the best results.

In Ontario the second consideration occupies the attention of the Division of Industrial Hygiene.

Such an object cannot be attained without the active co-operation of employer and employee. Many recognize the advantage of health to the individual and the plant now—but many must be shown. Any such effort involves a knowledge of existing conditions; in fact, they move hand in hand.

Maintenance of General Information Bureau on Industrial Hygiene.

(1) Accumulation of material on theory and practice of all branches of industrial hygiene in other countries and in Canada.

The material in hand includes general works, records of action taken for the promotion of industrial hygiene by government departments and records of the progress of scientific research, health legislation, statistics and data on mortality and morbidity of industrial workers, surveys of various industries, reports of plant physicians and industrial engineers on special problems, etc., etc.

(2) Means adopted for making such material available for manufacturers, plant physicians, sanitarians, industrial engineers, foremen, welfare workers, etc.

(a) *The General Public.*

Articles published in newspapers and journals.

The industrial health moving picture: This moving picture, which is the first to be produced on industrial health specifically, was written in the Division and acted under direction of the Division in a Toronto factory. The subject deals with personal hygiene and such measures for health protection as rest with the workers themselves—living conditions, food, clothing, use of plant welfare facilities, recreation, etc.—are covered.

The moving picture was shown in Toronto theatres, in one Toronto factory, and is being shown in other towns and factories in Ontario.

The exhibit: This took the form of a huge mechanical toy showing the effects of good and bad health conditions throughout the different stages of life.

(b) *Employers.*

Articles in *Industrial Canada.*

Answers to requests for information.

(c) *Employees*—Foremen.

Articles published in the Y.M.C.A. Industrial Bulletins.

(d) *Medical Health Officers in the Field.*

These have been supplied with reports on the main problems in industries within their districts, showing the hazards to be looked for and the requisite preventive measures.

Entry to Industry.

The time to begin safe-guarding the health of workers coincides with the entry into industry from school. Recent legislation in Ontario requires that all such children obtain employment certificates verifying age. No provision is made for physical examination or recommendation to the child or his parent as to occupations which would be harmful to health considering any disability present.

As part of an attempt to determine what is happening in this respect, in co-operation with the Department of Education and City Health Department the school medical histories of school children in Toronto who left school for work in 1920 and 1921 were reviewed.

This was calculated to show the proportion of children entering industry with physical handicap.

This new use for these records renders additional information necessary without greatly increasing the effort involved.

Recommendations made in this connection have been acted upon by those responsible.

On account of the unemployment situation the opportunity was presented for determining the industrial and medical histories of a group of children who have been away from school from one to three years and are now applying at the Ontario Government Employment Bureau for work.

Physical examinations have been conducted of a number of these boys and the findings compared with their school medical histories, in order to form an idea as to how far preventive health measures could be expected to give results.

This work is proceeding slowly.

Investigation and Demonstration.

1. *Spray Painting.*

At the request of the Committee on Industrial Fatigue, all arrangements were made for an investigation by the Department of Pharmacology of the University of Toronto into the hazards to health involved in the use of the paint spraying machine. At the time it was not possible to locate any instance where this work was being done out of doors. At present that side of the investigation is being arranged for.

The report in reference to inside spray painting is awaiting publication in the *Journal of Industrial Hygiene.*

Specific recommendations to employer as to exhaust power, etc., required are delayed pending the discovery of some simple practical means of measuring their effectiveness for different sizes and shapes of hoods. This appears to be nearing solution.

The investigation showed that exhaust systems can adequately provide protection to the worker where the spray painting machine is used on product.

The question of hazard from the use of the volatile bodies—thinners and driers—is inherent in this investigation but will be referred to later.

2. *Incidence of Lead Poisoning.*

A beginning has been made in an effort to determine the extent of lead poisoning among workers exposed to lead.

A clinic has been established at "Spadina House" for the physical examination of such men exposed as are willing to appear.

The plan provides that workers should be examined in industrial groups:

(a) House painters.

(b) Employees in paint manufacturing plants.

(c) Employees in electric accumulator manufacturing plants.

(d) Employees in furniture manufacturing plants, etc.

It is already apparent that the investigation must include inquiry into the hazards involved in the use of volatile bodies.

Concurrently with the examinations, laboratory investigation is proceeding in the attempt to throw further light on the content of these volatile bodies in the air, which is injurious, and on the effects to the human subject of small doses continued over long periods of time.

Apparatus for collecting air samples for detecting the presence of pigment in volatile bodies requires attention.

3. *Miners' Phthisis.*

In co-operation with the Chief Inspector of the Department of Mines, an investigation is being made to determine whether miners' phthisis is being produced among hard rock miners in Northern Ontario.

Men who answered three requirements were chosen for examination:

(1) Had not worked in any other mining camp.

(2) Had worked in one camp for periods varying from 6 to 10 years.

(3) Had worked underground throughout that time as driller or mucker.

General and special chest examinations were arranged for—the latter conducted by Dr. J. H. Elliott, Chest Specialist.

Stereoscopic X-ray plates were taken and their special examination provided.

Dust content and air currents were measured. Microscopic and petrographical examinations were made of the rock, the dust, and tailings.

Investigation showed cases of incipient miners' pthhisis.

As a result mine managers in Northern Ontario are placing no further orders for dry drills so that shortly the wet drill will be in use generally.

The report on this investigation will be forthcoming in the near future.

4. *Occupational Diseases.*

General.

Individual instances of suspected occupational disease have presented themselves, commonly from the Factory Inspection Division of the Labour Department and from private physicians.

Records of occupational disease incidence from official sources indicates that they are rare. (Workmen's Compensation Report for 1921 shows 5 cases of lead poisoning compensated and no other cases of illness among the 7 occupational diseases for which compensation is paid under the Act).

The few widely separated types of cases coming to the attention of the Division indicate that value would ensue from some method whereby physicians would report cases of actual or suspected cases of occupational disease to the Board of Health. Such procedure would draw to the attention of the general practitioner the occupational factors in illness to our mutual benefit.

Benzol Poisoning.

One death and one case of illness from benzol poisoning occurring at the same time in the same establishment were investigated. Huge tanks for storing oil were being painted with a paint of a high drying power containing a large proportion of benzol.

Preventive measures were recommended which enabled the workmen to proceed with this operation unharmed.

Denatured alcohol.

Three cases of dermatitis associated with the use of denatured alcohol for cutting shellac and varnish in picture moulding manufacture were reported by an employer.

Repeated analyses of the alcohol have failed to reveal the real cause of the trouble. Investigation of the conditions of work have not been more successful.

Special eye examinations show no signs of methyl alcohol poisoning.

Temporary preventive measures have served to relieve the situation. The whole question is being reviewed. Methyl alcohol will no doubt receive additional consideration as progress is made with the paint investigation.

Arseniuretted Hydrogen.

The evolution of arseniuretted hydrogen gas in an electric accumulator manufacturing plant was considered as a possible cause for illness there. Investigation showed that the difficulty in this case was not attributable to this source and the question of arseniuretted hydrogen poisoning there can be set aside on account of need for arsenic—free lead, and sulphuric acid, in the processes.

There are other suspected cases of occupational poisoning receiving consideration at the moment.

Service rendered to plants in such instances and as a result of the special investigations which are being conducted along lines of occupational disease should emphasize the importance of health and consideration of the best means of ensuring it.

5. *Thorold.*

The services of the public health nurse have been enlisted to indicate something of what can be done to eliminate sickness in industry and show the inter-relationship between general community and industrial health which prevents loss to all.

The Child Welfare Division of the Provincial Board of Health detailed two nurses, one with industrial experience, to conduct public health activities for the community of Thorold including its industries. The co-operation of the Medical Health Officer and of the employers of the plants concerned was readily obtained. This is essential to such a demonstration.

The town was divided into two parts. On the general community side, contact with the inhabitants was established through house to house survey, well-baby clinics, and birth registration; on the industrial side, through one hour spent daily at the plant dispensaries when *first aid* was given for cases of accident and sickness and absentee lists provided by the plants. All visits arising out of these contacts were grouped. Each nurse visited in her own section of the community, thereby avoiding much duplication of visits in the area covered, and correlating visits for adults and children of different ages.

Value, where assessable, ensuing from these visits in the case of employees—with their consent—was drawn to the attention of employers concerned in a monthly report, in the hope that where not already appreciated they would see the value of such work.

As a result the town of Thorold and the four industries concerned have united in securing the services of a public health nurse for general community and industrial preventive work, payment of her salary and expenses contributed to by employers on a per-employee basis.

The economic conditions obtaining during the year 1921 have not been conducive to expansion by employers or others along new lines of endeavour. Such progress as it is possible to report is dependent solely on the co-operation of employers and employees, the advice and assistance of many interested in the social and technical phases of the work, both within and without the organization of the Provincial Board of Health, and—to the untiring effort of the immediate staff of the Division and those associated with it for field work.

ANNUAL REPORT, DIVISION OF VENEREAL DISEASES.

SIR,—I have the honour to submit the following report of the Division of Venereal Diseases for the year ending December 31st, 1921.

Broadly speaking, the plan detailed in the annual report of 1920 has been followed during the past year although the volume of work has necessarily expanded very much.

The personnel of the Division during the past year has consisted of three physicians, one social service nurse, and one stenographer.

The amount of money available for V. D. work was $120,000, of which $57,473.68 was advanced by the Dominion Government.

1. *Diagnosis*

(*a*) *Laboratories*—

There were six Provincial laboratories where Wassermann's dark field examinations for spirochaetes and examinations of smears for gonococci were carried out free of charge. These six laboratories were located at Toronto (main laboratory) London, Kingston, Fort William, North Bay and Saulte Ste. Marie. Two additional laboratories are now open in Owen Sound and Peterborough. In order to show how these laboratories are appreciated by the physicians of the Province and how much they are used, a short résumé of the examinations made (including the results) for syphilis and gonorrhoea is here inserted.

	Wassermann's.			Dark field examinations.			G.C. examinations.		
	Pos.	Neg.	Total.	Pos.	Neg.	Total.	Pos.	Neg.	Total.
Toronto	2,596	13,024	16,620	25	75	100	493	1,604	2,097
London	773	2,372	3,145				99	206	305
Kingston	185	1,040	1,225				59	131	190
Fort William	184	702	886	7	6	13	75	191	226
Sault Ste. Marie	136	195	331	4	4	8	95	71	166
North Bay	89	191	280	0	2	2	54	148	202
Total	3,963	17,524	22,487	36	87	123	875	2,351	3,226

The laboratories also report that the following new cases were diagnosed as cases of syphilis or gonorrhoea by Wassermann test or smear examination during the year:—

	Syphilis	Gonorrhoea
Toronto	1,083	380
London	532	94
Kingston	197	61
Fort William	99	77
Sault Ste. Marie	30	15
North Bay	55	47
Total	1,996	674

There are also laboratory examinations for venereal disease made in the city laboratories of Toronto, Hamilton and Ottawa, and at the Toronto General Hospital and Grace Hospital, Toronto. The figures for these laboratories are unfortunately not available but represent a very substantial total. There are also examinations made by private laboratories and by physicians in their own laboratories. These figures are also not available.

(*b*) *Reporting of cases by Physicians*—

The number of cases of venereal disease reported by physicians during the year 1921 was as follows. (For purposes of comparison the figures for 1920 are given).

Diseases	1921 cases	1920 cases
Syphilis	2477	1740
Gonorrhoea	2554	2158
Chancroid	61	82
Total	5092	3980

It will be noticed that during the past year there has been a very marked increase in the number of cases reported. It is considered that this is largely due to the fact that physicians are reporting their cases better and also to the fact that cases that go to the clinics for treatment are all reported.

There is, however, still a great deal of work necessary to make the cases reported more nearly approach the true number of cases of venereal disease in the Province. It is hoped that there will be a gradual steady improvement in the reporting of cases by physicians.

2. *Treatment*

(*a*) *Clinics*—

The special proposition of the Board with reference to the establishment of V. D. clinics in the larger cities has been extended during the year to several more of the larger cities of the Province. At the beginning of 1921 there were nine clinics established and in operation in Ontario. Four of these were established in the last three months of 1920. Since the beginning of 1921 four additional clinics have been opened as follows:—

Owen Sound	—Office Building	Mar. 15, 1921.
Brantford	—Brantford General Hospital	May, 19, 1921.
Ottawa	—Ottawa General Hospital, Water St.	July 13, 1921.
Fort William	—McKellar Hospital	Sept. 1, 1921.

There are in all thirteen clinics in Ontario where free treatment, under the directions of the Provincial Board, may be obtained. These clinics are, practically without exception, growing rapidly and giving good satisfaction. Undoubtedly hundreds of cases, which otherwise would have received very insufficient or unsatisfactory treatment, have been efficiently treated; they have, therefore, not become a menace to the general public, but have become instead of a charge, an asset to the province.

The Division expects to complete arrangements with two or three other cities for the early establishment of venereal disease clinics in these cities.

In connection with the clinics the medical treatment for syphilis is excellent, but it is more difficult to treat gonorrhoea in men satisfactorily, as thoroughness in examination is very necessary for diagnostic purposes and in large clinics on account of lack of time this is very difficult to arrange. The treatment of gonorrhoea in women is satisfactorily carried out, and the results are on the whole encouraging. I believe that physicians who work in these clinics and who are at present giving their time free should be paid at least an honorarium, especially for the night clinics. I wish here to express my appreciation to those physicians in the clinics who have cheerfully given their time and ability, often at great personal disadvantage, in order to make the clinics a success.

The number of out-patient treatments given during the past year was 41,707. These included the treatments given for both gonorrhoea and syphilis. The number of in-patient treatments given in the hospitals where there are clinics was approximately 25,000. All in-patients treated in hospitals were referred to private physicians or clinics for further observation and treatment on discharge from hospital. In this way treatment was not allowed to lapse but the tendency was to carry it to a finality and to obtain a cure. Hospitals, clinic physicians and the social service nurses have all assisted, but too much praise cannot be given to the social service nurses for their unselfish and devoted work in persuading patients to carry on their treatment. This type of work is often disheartening and the fact that very few cases are lost speaks well for the work being done by these nurses.

In connection with the work done by the social service nurses in the clinics, the following statistics are of interest:—

(1) Two hundred and fifty sources of infection were located and placed under treatment during the year. Besides these, sixty-five parents, whose syphilitic children were under treatment, were examined, found to be suffering from syphilis and placed under treatment.

(2) The average number of visits made by the thirteen social workers per month was 320, or during the year 4,160 visits were made to investigate home conditions, locate patients attending irregularly, locate contacts, etc. This amount of work naturally was of the greatest possible value to the community concerned. Besides these visits many cards are sent to patients who missed their treatments urging them to return. This necessitated a great deal of clerical work but saved many unnecessary visits.

(3) The average number of patients attending the various clinics during a month was 1,125. The number of patients treated during the year was just over 5,000.

(4) The number of patients who failed to report for treatment and who were persuaded to return and continue treatment was 906.

(5) The number who were lost was 674.

(5) The number of patients whom the police persuaded to return for treatment was 34 and the number arrested only 31.

These facts show the value of the nurse, as less than ten per cent. of the patients under treatment during the year were lost. The astonishing point in this connection is that of this ten per cent. many turn up within the course of a year or two, being located in various ways. It should be understood that the figures of (6) do not include those individuals who are discovered, while in custody, to be suffering from a venereal disease, but only includes incorrigibles who cannot be handled except by legal measures.

(*b*) *Treatment in Smaller Centres*—

It has not been feasible, as forecasted in the 1920 report, to establish clinics in the smaller centres. In the case of the smaller centres, on request from the M. O. H., a specialist from the Division has proceeded to the centre and has instructed local physicians in the treatment of venereal disease cases when the patient is not able to pay, arranging that the local physician will carry on the further treatment required. In this way, besides arranging for efficient treatment of these scattered cases, the physicians locally have received up-to-date instruction in the treatment of venereal disease. This scheme has been eminently satisfactory and over seventy-five visits of this character were made during the year and over two hundred physicians received instructions in the administration of salvarsan and in other V. D. treatment methods.

The main laboratory at Toronto arranges to send such material as sterile distilled water and sodium hydrate to the physicians carrying on the treatment in the case of syphilis. The entire scheme has received unqualified approval from the medical men of the province.

During the year 500 individuals were carried on the files of the Division because they were moving from one municipality to another. Practically 100% of these were placed under treatment through the local Medical Officers of Health. This was particularly valuable as continuity of treatment was thus ensured.

(*c*) *Treatment in Institutions*—

The diagnosis and treatment of venereal diseases in the Provincial Reformatories has been a very important part of the work performed. Whole hearted cooperation has been received from the physicians of the institutions, especially at Guelph Reformatory and the Burwash Industrial Farm. The treatments in these institutions have been as a rule carried out by the specialists of the Division with the assistance of the physician in the institution. During the past year twenty-five trips were made to the Burwash Industrial Farm and approximately two hundred and fifty injections of salvarsan and three hundred and seventy-five special treatments for gonorrhoea were carried out. In the same time thirty-two trips were made to the Guelph Reformatory and three hundred and twenty injections of salvarsan and the same number of treatments for gonorrhoea given.

The following table summarizes the work carried on in the reformatories in Ontario during the past year:—

	No. of Visits	Syphilis Treatments	Gonorrhoea Treatments
Burwash Industrial Farm	25	250	375
Mercer Reformatory	52	1300	nil
Guelph Reformatory (Opened Apl. 1921)	32	320	320
Women's Farm, Concord	8	(Supervision)	
Mercer Reformatory	52	1300	nil*
Ontario Jails	8	(Supervision)	

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*G. C. treatments in the Mercer Reformatory are carried out by the physician of that institution.

The treatment carried out in the reformatories and the Jail Farm at Concord is of the very best. The results are excellent and, generally speaking, the physicians in the institutions are keenly interested in the work. The same cannot be said for the Jails in the province where the venereal treatment carried out is far from satisfactory, due to various causes. It may not be possible to remedy this condition for some time but attempts are constantly being made to improve the situation.

I am of the opinion that the type of girl found in the Mercer Reformatory could be handled to better advantage by a female physician and have recommended that, as soon as possible, a female physician of outstanding ability be appointed for this purpose. This physician should be specially trained in the treatment of venereal disease as this type of work will utilize perhaps half of the time spent at this institution. I should consider that at least two and a half days per week will be required to efficiently carry out the venereal disease treatments.

I cannot leave the treatment in institutions without mentioning especially the excellent work being done in the Mercer Reformatory in connection with V. D. treatment by the resident nurse.

The results of the examination of prisoners by the Wassermann test has been of great practical value and has given an idea of the extent of V. D. among this class of the population.

Burwash Industrial Farm, 1920-1921.

			Positive
1920	No. of Wassermanns	1301	130
1921	No. of Wassermanns	1306	89
	Total for two years	2607	219
	% Pos. cases—8.4 Syphilis.		

Guelph Reformatory

No. of Admissions.	
No. of Wassermanns, April, 1921—December, 1921	927
No. of Positive Wassermanns	99
% of Positive Wassermanns	10.6%
No. of G. C. cases	77
% of G. C. cases	8.3%

Mercer Reformatory

New Admissions or	
No. of Wassermanns, January 1921—January, 1922	173
No. of Positive Wassermanns	56+9.65
% of Positive Wassermanns	38%
No. cases of Gonorrhoea	45
% cases of Gonorrhoea	26%
No. cases Double Infections	25
% cases Double Infections	14%
No. of Wassermanns Nov. 1st, 1919—April 1st, 1920	116
No. of Positive Wassermanns	28
% of Positive Wassermanns	24%

Fort William Industrial Farm

All inmates of this institution were examined and all cases of venereal diseases were placed under treatment as soon as discovered. The treatment was supervised and carried out weekly by the director of the Fort William Provincial Laboratory. When the clinic at Fort William was established, treatment was carried out at the clinic, the patients reporting there under guard.

(*d*) *Manufacture and Distribution of Phenarsenamine*—

The Board, through the main laboratory at Toronto, has been busily engaged in manufacturing Phenarsenamine (similar to old salvarsan) for use by medical officers of health, clinics and public institutions in this and other provinces in Canada. The Board, however, is still unable, owing to the terms of the Dominion license, to supply this product to medical men for the treatment of their own private patients and has been greatly handicapped by this fact. However, a great deal of the preparation has been used by clinics, institutions and local medical officers of health in the treatment of patients who have no means and are unable to pay either for a physician or the drug.

During the past year distribution of Phenarsenamine was made as follows:—

	To Institutions in Ontario:	
	Ampoules	1,196
	Grammes	630.9
	To Clinics, Medical Officers of Health, etc., in Ontario:	
	Ampoules	10,880
	Grammes	5,800.1
Total	Ampoules	12,076
	Grammes	6,441
	To British Columbia:	
	Ampoules	1,750
	Grammes	630
	To Manitoba:	
	Ampoules	144
	Grammes	43.2

Samples of the preparation have been sent to the other Provinces and it is expected that the amount distributed to points outside the Province will next year be materially increased.

I cannot let the occasion pass without saying how much the co-operation of the Division of Laboratories has meant in the efficiency of the Division of Venereal Diseases. There has been the closest co-operation at all time, especially in connection with the manufacture, testing (by animal, chemical and human tests), distribution and administration of Phenarsenamine. The remarkably even standard of the drug, the ease of administration, the absence of reactions and its undoubted therapeutic effect have all been of the greatest importance in popularizing its use.

The Division, in co-operation with the Main Laboratory, has carried on a great amount of research work in connection with the questions of toxicity, therapeutic tests, and so on. It is intended to extend this work during the coming year by increasing the scope of these researches.

3. *Education*

(*a*) *General*—

The scheme for the education of the public has been carried on with increased vigour during the past year. A large amount of literature on venereal disease was distributed through voluntary organizations local medical officers of health and through clinics as well as supplied to individuals who wrote or personally applied for it. The following pamphlets are now available:—

V. D. No. 1—General Facts on Venereal Diseases.
V. D. No. 2—Facts for Boys and Young Men.

V. D. No. 5—Facts for Girls and Young Women.
V. D. No. 9—Short Description of Venereal Disease.
V. D. No. 10—Instructions to those having Venereal Disease.

Medical men have been circularized and have all received four excellent pamphlets on the technical side of the diagnosis and treatment of venereal disease. These pamphlets, which were printed by the Dominion Department of Health and circulated by the Provincial Board, have received the commendation of many medical men.

Dr. J. H. Stokes' booklet has retained its position as one of the best monographs in print and many additional copies of this excellent little book have been distributed to physicians and medical students.

The members of the Division have spoken at many public meetings, medical meetings, meetings of women's organizations, etc., during the past year and in this way excellent publicity has been obtained. The social service nurse alone spoke at over twenty-five meetings during the year.

The film for women, "How Life Begins" has been shown to over 1,000 women and is becoming very popular as a means of assisting in sex education.

The technical film, "The Modern Diagnosis and Treatment of Venereal Disease" has been shown to over 500 physicians during the year.

During the National Exhibition in September in Toronto a very interesting exhibit on venereal disease was held as part of the exhibit of the Provincial Board of Health. An attractoscope with slides, posters and pamphlets were used and excited very favourable comment. Many samples of literature were given away and many questions answered. A special tent was erected where a physician was present at certain hours to advise any men who wished information on any medical aspect of the venereal diseases. This was astonishingly well patronized and will undoubtedly be a very important feature of the next exhibit.

In connection with the educational programme, the very closest co-operation was maintained with the Canadian National Council for Combating Venereal Diseases. This organization during the past year has, under the energetic management of the indefatigable secretary, Dr. Gordon Bates, and the executive, done an enormous amount of useful work along educational lines. The course on social hygiene arranged in conjunction with the Univeristy of Toronto was a triumph in itself. The addition of the noted English speaker, Mrs. Pankhurst, to the staff of the council has been the means of arousing the greatest interest in social hygiene among the women of Ontario. Mrs. Pankhurst will undoubtedly be a very powerful asset to the council in its work.

During the past year a refresher course of four days was held during the week preceding Christmas at the Toronto General Hospital under the auspices of the University of Toronto. The course was very well attended and the instruction and the demonstrations given were of the very best.

During the meeting of the Ontario Health Officers at their annual conventions a demonstration of the administration of Salvarsan both by the gravity and syringe methods, as well as the administration of mercury salicylate intramuscularly was given; the demonstration was a huge success; over one hundred physicians were present and observed, under ideal conditions, the treatment of several patients.

(b) *Social Service Nurse* –

This nurse has been of the greatest possible help in the campaign. Her investigations in the Mercer Reformatory alone have been invaluable. She has been a great help in training the social service nurses in the various clinics; as the type of work to be done requires the greatest possible tact and sympathy, this part of her work is by no means the least important. She has been working with the Ontario hospitals in following up the contacts of cases of syphilis in these institutions. Under the Director she has been of help in arranging for the examination of the contacts of children reported as dying of congenital syphilis. As a rule this examination is carried out through the private physician in charge of the case and the work accomplished has been very valuable both from the standpoint of treatment and education. Some of the work performed by the nurse may be summarized as follows:—

Clinics attended (day)	—52
Clinics attended (night)	—10
Meetings attended	—60
Lectures attended	—12
Follow up visits	—10

Visits to Institutions (other than Mercer)	—12
Visits to Women's Court	—7
V. D. Investigations	—8
Instructing V. D. clinic nurses	—18 days
Film showings—12	1,000 people
Mercer Reformatory	—32 days

The work done by the Division during the past year has greatly increased. Unfortunately for a great part of the year one of the physicians has been handicapped through illness. This has thrown much extra work on the other members but the extra burden has been cheerfully accepted. I feel that the various members must be congratulated on the excellent spirit and cheerfulness displayed. Sometimes the work has been very heavy but the physicians, the social service nurse and the stenographer have worked faithfully and given their best at all times.

I can only conclude by saying that the Division hopes to do more efficient work during the coming year as it is realized that there is much to do and that the road to success is far from smooth.

ANNUAL REPORT, DIVISION OF PUBLIC HEALTH EDUCATION.

I have the honour to submit the following report of the Division of Public Health Education, for the year ending December 31st, 1921.

This Division has endeavoured to get in touch with more and more people throughout the province and provide them with literature and advice on matters of personal and community health, and the progress of public health in general. That this propaganda is taking effect is much in evidence by the enquiries coming in from all parts of the province, asking for advice and literature on various health topics.

One of the important methods for the spread of health propaganda has proved to be the weekly newspaper, and a health article now appears in 220 newspapers throughout the province. From far and near, from British Columbia, Alberta and Saskatchewan, from Quebec and from points all over Ontario, questions come in from readers of these weekly papers asking for information on health topics.

A series of pamphlets have been prepared for general distribution, including "Health Promotion and Disease Prevention," "Breast Feeding of Infants," "The Need for a Public Health Nurse," and "The Health Almanac." This almanac has proved especially attractive, nearly 20,000 copies having been distributed all over the province.

In the matter of diffusing Public Health information, valuable assistance and co-operation have been received from the Women's Institutes throughout the province. These societies, scattered far and wide, are always ready and anxious to help in the great work of improving the health of the people in their respective districts.

That this health information is very necessary in rural communities is indicated to some extent at least by the conditions in the rural schools in many parts of the province. Approximately 800 Medical Officers of Health send in their reports yearly on the sanitary conditions of schools, and in many cases the conditions are deplorable. The insanitary state of the closets, the absence of washing facilities for the children, the lack of care in providing pure drinking water, etc., are matters of great concern which need to be given more attention. In some districts, however, the public health spirit seems to have been instilled into the minds of the people, for the reports received as to the condition of the schools are very encouraging and show that the importance of hygienic and sanitary conditions is being recognized.

Public Health Education has received an additional stimulus through the lecture courses inaugurated by the Ontario Medical Association. Arrangements have been made for speakers from the various divisions of the Provincial Board of Health to give lectures on Public Health topics before local medical societies throughout the province, thus bringing authentic information as to the latest activities of the Provincial Board directly to rural practitioners. Several of these Public Health lectures have already been given, and many more are planned for the coming year.

Propaganda work on behalf of the appointment of a Public Health nurse has been undertaken on occasions when intensive publicity is required. By the aid of posters, and newspaper announcements, the itinerary of the Child Welfare Special which toured a large section of the province last summer, was kept before the people of the places visited. In St. Mary's, Port Colborne and many other places, public meetings were held, setting forth the value of a Public Health nurse to the community.

Much publicity in advance was given the combined meetings of the Canadian Public Health Association, the Ontario Health Officers' Association, the Canadian Association for the Prevention of Tuberculosis, and the Canadian Council for Combating Venereal Diseases, held in Toronto in May last. A very elaborate programme was prepared, and as a result this Public Health Convention was one of the most successful yet held.

Several features entirely new were embodied in the Provincial Board of Health's exhibit at the Canadian National Exhibition this past year. For weeks before the Exhibition opened in Toronto, notices were sent periodically to various city and provincial papers describing the exhibit. A large stage, which it is intended, will serve more or less as a permanent structure for Public Health entertainments and demonstrations, was erected, and a programme provided which held the attention of the crowds every afternoon and evening. Chief among the entertainers was "Happy," the health clown, a merry jester who kept the youngsters and many grown-ups interested with his homely logic and good advice on health topics. Another graphic display of Public Health activity was provided by means of a huge electrical device consisting of two ladders, one leading to good health and happiness, the other to ill-health and misery. Each step along the path of childhood, youth, and adult life was illuminated by an electric sign, setting forth either a warning or an encouraging word to the wayfarer. The novelty of this exhibit attracted the attention of the thousands who passed it day by day, and the graphic way in which the good health propaganda was offered, appealed to everybody. It is hoped that this display method of Public Health propaganda will receive wider publicity.

The milk exhibit, showing the method of pasteurizing milk and general sanitary conditions in the handling of milk, was an attractive feature, as were all the sections dealing with Venereal Diseases, Vital Statistics and Sanitary Engineering.

Considerable delay has been occasioned by the printers' strike this past year in the publication of the annual report for 1920. The material has been in the printers' hands since last spring, but unfortunately little progress has been made in spite of continuous inquiries.

Owing to the great need for continuous personal propaganda in Public Health, I would recommend the appointment of one or more Public Health teachers who could carry on a continuous campaign of lectures, health talks and publicity all over the province. Such a teacher or teachers could materially assist in preparing the way for a community nurse demonstration, and otherwise be of great assistance in the work of Public Health Education.

REPORT OF THE PROVINCIAL SANITARY ENGINEER

F. A. Dallyn, C.E. (Tor.)
Provincial Sanitary Engineer.

Gentlemen:—

I have the honour to submit the following report upon the work of the Sanitary Engineering Division for the year 1921. The following applications were received and approved:—

	Certificates.	
Water Works (extensions)	138	$3,707,402 67
" " (new)	10	551,738 31
Water Purification	2	240,000 00
	150	$4,499,140 98
Sewer Extensions	217	2,816,054 11
Total	367	$7,315,195 09

There appears to be an awakened interest in the extension of sewerage facilities in the smaller towns and in improvements to existing water supplies. Much of the work is the culmination of investigations carried on by the Board, and local educational campaigns, that the councils might obtain the necessary backing of an informed public opinion in carrying out needed improvements. A summary of the municipal activities, *re* sewage and water since 1915 shows an increasing annual expenditure on these works.

1915—Total applications	286	Total estimated cost	$4,679,496 74
1916— " "	190	" " "	2,010,070 42
1917— " "	186	" " "	2,880,534 72
1918— " "	146	" " "	1,590,658 39
1919— " "	256	" " "	5,508,698 53
1920— " "	262	" " "	7,859,659 50
1921— " "	367	" " "	7,315,195 09

Sanitary Engineering Division.

Among those features of the work of the Division during 1921 which may be considered of more than usual interest, may be mentioned:

(1) Fly Control.

A special investigation was carried on in the Northern paper towns in the control of the fly nuisance. We have been able to show, and it was possible to demonstrate, in the course of six weeks during the height of what was commonly recognized as the fly season, that control could be had of both the numbers and the breeding of house flies and blue and green bottle flies.

The work divided itself into locating and controlling the breeding places and the setting of traps. At the beginning of the campaign as many as 1,000 flies per hour would be caught in a trap. As soon as control had been properly established, the number of flies caught in a trap were reduced to less than 100 per twenty-four hours. The butchers were experiencing a great deal of trouble in keeping their meat at the commencement, but during the latter part of the investigation, in the month of August, no difficulty was being experienced whatsoever and the fly campaign became extremely popular.

It was shown that the breeding ground of the blue bottle flies was in privy vaults and that the larvæ could be killed by application of chloride of lime, and that it was only necessary for this application to be repeated every five days on any fresh material.

This work is being made the subject of a special Bulletin now in the course of preparation.

(2) SANITARY SURVEYS.

Special investigations or sanitary surveys which were continued from the previous year, as to the use of public utilities such as water and sewerage, reveal the fact that in many municipalities a very high percentage of private wells and privy pits are allowed to continue, even though sewerage and water facilities are available, either on the same or on adjacent streets. And while this is a matter which could be corrected through the exercise of authority reposing in local Boards of Health, there appears to have been no general appreciation of the extent of these conditions until the Board showed by means of spot maps the numbers and location of premises in municipalities under investigation. Upon these spot maps were indicated houses not connected to sewers and houses not connected to water mains and, also, the location of privies and private wells.

It has been encouraging to see what use has been made locally of these maps, once the information has been compiled and presented. Very little difficulty arises in connection with new property; so that the problem revealed is a problem of promoting sanitary connections in older property and in sections building up in advance of the extension of waterworks and sewerage.

Some nineteen municipalities, having a total population of possibly 75,000, were surveyed during the season. In addition to the preparation of these spot maps, samples were collected and analyzed from each private well. A report upon this examination is included in reports to the various municipalities.

(3) CONNECTIONS FOR AUXILIARY FIRE PROTECTION EQUIPMENT.

Then, too, in addition to the routine investigations carried on by the Department for the protection of public water supplies, there has been a special investigation into conditions surrounding auxiliary fire protection equipment, resulting in the preparation and sanction of new regulations requiring double check valves on all such connections, and the separation of domestic systems from fire protection systems, where the auxiliary supply was of a specially dangerous character.

COPY OF AN ORDER-IN-COUNCIL, APPROVED BY HIS HONOUR THE LIEUTENANT-GOVERNOR, DATED THE 6th DAY OF JULY, A.D. 1921

(*The Ontario Gazette*, July 23rd, 1921.)

Upon the recommendation of the Honourable the Minister of Labour, the Committee of Council advise that the attached Regulations passed by the Provincial Board of Health under the authority of Section 8 of The Public Health Act, on May 27th, 1921, re the connection of auxiliary, railway, factory or other water supplies, including fire protection systems, or apparatus, with a municipal waterworks system, the distribution of which is for public, domestic or general use, be approved by your Honour.

Certified.

C. F. BULMER,
Clerk, Executive Council.

REGULATIONS GOVERNING THE CONNECTION OF AUXILIARY, RAILWAY, FACTORY OR OTHER SUPPLIES, INCLUDING FIRE PROTECTION SYSTEMS, OR APPARATUS, WITH A MUNICIPAL WATERWORKS SYSTEM, THE DISTRIBUTION OF WHICH IS FOR PUBLIC, DOMESTIC OR GENERAL USE.

1. No fire protection system, railway, industry, factory, or other water supply shall be connected with a municipal waterworks system, except as herein provided, and every connection not conforming with these regulations, or not maintained as herein provided, is declared a nuisance, and a menace to the public health, subject to penalties as set forth in Section 10 of these regulations.

2. Every private pipe system for the conveyance of water for manufacturing or domestic purposes shall be entirely independent of private pipe systems installed for sprinkler risk, and fire protection services. Every main used for the conveyance of water, other than the domestic and sanitary supply, shall be clearly marked by a distinctive color of paint or otherwise. Nothing in this section shall be read as to exclude any service connection between the municipal main and check valves, as provided in Section 4.

3. No system circulating water for cooling and other industrial purposes, such as the operation of elevators, etc., shall have connection or return to the underground or any other storage tank used for fire protection, and all such tanks shall be protected against the entrance of drainage water, or other deleterious matter or things.

4. A connection may be maintained between a fire protection system and a municipal water supply, and every such connection shall be protected with dual check valves of approved type, with the proviso that this section applies only to:
(a) Where overhead tanks are used as an auxiliary source for the supply of water for a sprinkler risk fire protection system.
(b) Where storage tanks are used solely for the supply of water for fire protection purposes, provided that on the discharge side of any pump used in connection with such storage tank, and for fire protection there is placed a gate valve, which shall, except in the case of a fire, be closed and sealed with light wire, and between the said pump and sealed valve a connection with a gate valve arranged to discharge to waste for testing purposes.

5. No connection, other than one used for fire protection, shall be maintained between any auxiliary railway or factory supply, or any storage tank and a municipal system. The supply of water for any such system may be obtained through an open discharge to a tank, and every such discharge shall be located above the highest water level.

6. No direct connection shall be maintained between high pressure mains for fire protection and a municipal domestic supply, save as provided in Section 5 to maintain water in a high pressure system.

7. Wherever an auxiliary fire protection exists, other than the connection provided by Section 4, the owner of the property so protected or served shall, within six months from the publication of these regulations in *The Ontario Gazette*, install double check valves for the purpose of protecting the municipality against the introduction of water from any such system.

8. The check valves, as provided for, and required to be installed by these regulations, shall be modern, clearway swing type check valves, with wide clearance, and of a type similar to that generally known as the "Factory Mutual," and subject to the approval of the Provincial Board. Each installation shall be provided with gate valves and the necessary devices for testing the water-tightness of the check valves, and every such installation shall be subject to inspection, and shall be maintained in proper working condition and state of repair. The valves shall be located in an accessible position for inspection.

9. Subject to the approval of the Provincial Board of Health, in writing, a connection may be maintained between a private supply and a municipal supply system where the Board, upon examination, certifies that it is of the opinion that the source of supply is of satisfactory quality, or satisfactorily protected for domestic consumption.

NORMAL CONDITION

OF VALVES

OPEN

Gates M-N

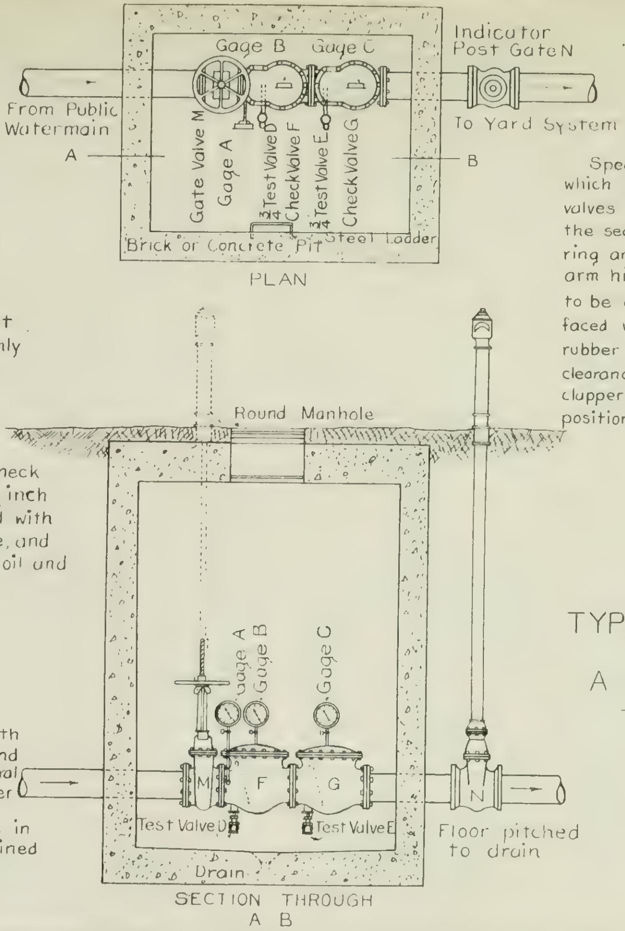
SHUT

Test Valves D-E

About once a year inspect check valves and thoroughly clean whole interior.

To facilitate removing check valve bonnets pack with $\frac{1}{8}$ inch sheet rubber packing faced with machine oil and graphite, and grease bolts with heavy oil and graphite.

Size of Pit etc. will vary with different sizes of valves and local conditions but in general the Pit should be not smaller than about 4·6 x 5x6 deep.
Pit to be water tight where in wet soil and properly drained where in dry soil.



PLAN

SECTION THROUGH
A B

F. M VALVES

Specifications under which these special check valves are made require the seat ring, disc holding ring and screws, disc stud, arm hinge pin and bushings to be of bronze, disc to be faced with medium hard rubber and liberal clearances left around clapper and arm in all positions.

METHOD OF TESTING

Open test valve D to blow out any sediment that may have accumulated in test valve or connecting pipe, and then close.
Close gate M and open test valve D.
If pressure falls at gage A & pressure at gage B holds after decreasing slightly check F is tight.
While test valve D remains open and pressure at gage A stands at zero, open test valve E. If pressure at gage B falls to zero and flow from test valve E ceases check G is tight.

CAUTION - Immediately at close of test see that gates M and N are open It is important that the protection be promptly restored.

PLAN
SHOWING
TYPICAL ARRANGEMENT OF CHECK VALVES
BETWEEN
A MUNICIPAL WATERMAIN AND ANY SERVICE THROUGH WHICH MAY BE INTRODUCED AN AUXILIARY SUPPLY

See Regulations of the Ontario
Provincial Board of Health July 6 1921

10. Subject to penalty as provided in Section 110, SS. 2, of the Public Health Act, every auxiliary connection for fire protection excepting as provided for in Section 9, shall, notwithstanding Section 7 of these regulations, comply with Section 4 within a period of two years from the publication of these regulations in the Ontario Gazette and all connections then existing shall be deemed a nuisance and a menace to the Public Health within the meaning of Section 73 of the Public Health Act.

(4) RESEARCH.

In the field of research, practical experiments have been carried on to determine whether a process cannot be evolved to take care of the sludge rising in the activated sludge process, from the smaller municipal plants. The results of this work are extremely encouraging and it may be cited that one municipality, treating a million and a quarter gallons per day by this process, and located in a built-up section, is experiencing no nuisance whatever from the disposal of the sludge since the inauguration of the plant in the month of May.

Other experiments are set out more fully in Bulletin No. 8.

(5) SANITARY CONTROL OF MILK SUPPLIES.

The water supplies now having been protected throughout the Province to a sufficient extent as to prevent their being a contributing factor in the distribution of typhoid fever, attention is now being directed towards municipal milk supplies, and data has been collected with the idea of suggesting legislation to provide more centralized control of milk producers and vendors.

(6) ASSISTANCE RE SANITATION OF GOVERNMENT INSTITUTIONS.

In addition to the other work of the Department, a considerable amount of consulting assistance has been given to the Public Works Department in connection with the protection of water supplies, and the design of sewage disposal plants of public institutions. In this connection it might be proper to cite the fact that the activated sludge plants have been uniformally successful for this purpose, and have resulted in a considerable decrease in the numbers of complaints and in the cost of supervision.

CERTIFICATES ISSUED RE SEWER EXTENSIONS FOR THE YEAR 1921.

Municipality.	No. of certificates.	Extensions.	Municipality.	No. of certificates.	Extensions.
Arnprior	2	$ 733 41	Guelph	1	54,231 33
Almonte	1	125,000 00	Hamilton	5	567,886 06
Barrie	5	6,815 00	Kingston	5	13,923 36
Belleville	4	16,227 77	Kingsville	4	45,138 63
Brantford	2	54,726 00	Kitchener	5	113,649 16
Brockville	1	42,215 50	Leamington	2	38,971 34
Burlington	2	2,256 91	Lindsay	9	17,828 05
Campbellford	1	4,550 00	London	32	187,326 96
Chatham	2	4,802 48	Midland	1	5,775 00
Cornwall	3	3,942 65	North Bay	1	15,348 00
Twp. of Cornwall	1	4,700 00	Niagara Falls	6	46,881 04
Dundas	1	45,000 00	Newmarket	2	44,000 00
Dunnville	3	34,130 30	New Toronto	1	13,878 00
Eastview	2	4,140 00	Ottawa	17	154,112 28
Elmira	3	24,059 72	Oshawa	3	89,917 80
Ford City	3	137,260 29	Renfrew	1	554 40
Fort William	2	3,268 85	St. Thomas	1	1,420 40
Galt	10	51,065 85	St. Catharines	2	25,025 78
Goderich	9	15,741 80	Sandwich	5	25,405 22

Municipality	No. of certificates	Extensions	Municipality	No. of certificates	Extensions
Sault Ste. Marie	4	123,160 76	Waterloo	1	5,579 18
Sarnia	6	45,885 76	Welland	3	37,072 49
Simcoe	2	54,322 26	Weston	2	5,684 00
Smith's Falls	6	25,220 86	Whitby	1	256 36
Stratford	4	7,191 54	Wingham	1	8,400 00
Sturgeon Falls	1	2,000 00	Woodstock	5	4,213 70
Sudbury	2	30,759 45	Windsor	9	149,820 51
Timmins	2	20,589 10			
Toronto	8	253,988 80		217	$2,816,054 11

SUMMARY

Extensions	$2,816,054 11

CERTIFICATES ISSUED RE WATER MAINS, PURIFICATION, ETC., FOR THE YEAR 1921.

Municipality	No. of Certificates	Extensions	New Sources of Supply and Purification	New
Alexandria	1	$ 800 00		
Almonte	1	175,000 00		
Anderdon Twp.	1	7,398 00		
Barrie	1	10,000 00		
Beeton	1	6,000 00		
Brantford	1	174,000 00		
Brockville	2	39,123 68		
Burlington	1	3,600 00		
Chatham	1	37,000 00		
Clinton	1	6,000 00		
Courtwright	1			$21,500 00
Dundas	2	50,000 00		
Dunnville	3	24,000 00		
Eastview	2	141,659 00		
Elmira	1	3,000 00		
Etobicoke	4	180,036 29		
Ford City	1	10,742 02		
Fort Frances	3	27,982 15		
Galt	3	26,910 64		
Georgetown	1			60,000 00
Goderich	1		$ 55,000 00	
Grantham	1	2,285 21		
Grimsby	2	8,495 93		
Guelph	2	6,505 00		105,000 00
Hamilton	9	165,715 56		
Hanover	1			85,000 00
Hespeler	1			6,462 28
Kingsville	1			19,300 00
Kingston	2			4,476 03
Kitchener	4	212,084 62	185,000 00	
Lindsay	2	10,152 68		
Listowel	1	8,717 06		
Markdale	1	5,000 00		
Markham	1	6,000 00		
Massey	1	1,445 00		
Midland	1	35,000 00		
Mitchell	1	1,635 55		

Municipality	certificates	Extension	New source of supply and Purification	New
Napanee	2	38,500 00		
New Toronto	3	3,616 00		$ 35,000 00
Niagara Falls	2	30,272 36		
Oshawa	6	24,833 05		
Parry Sound	1	15,000 00		
Pembroke	2	11,756 65		
Perth	1	24,102 83		
Peterborough	1	15,428 28		
Petrolia	1	42,000 00		
Port Colbourne	2	65,696 48		
Port Credit	1			110,000 00
Port Dalhousie	1	25,000 00		
Port Hope	1	7,600 00		
Port Stanley	1	969 65		
Richmond Hill	1	96,000 00		
Riverside	3	19,429 92		
St. Catharines	2	31,082 57		
Sandwich	4	17,157 62		
Sandwich East	3	15,916 16		
Sarnia	1	13,000 00		
Stratford	2	67,153 50		
Sturgeon Falls	2	5,700 00		75,000 00
Sudbury	3	22,474 42		
Tilbury	1			30,000 00
Timmins	2	33,307 12		
Toronto	7	941,788 47		
Tottenham	3	16,000 00		
Uxbridge	1	50,000 00		
Welland	2	19,734 70		
Weston	4	24,650 00		
Windsor	1	150,000 00		
Wingham	1	6,500 00		
York	17	671,444 50		
Total	150	$3,707,402 67	$240,000 00	$551,738 31

SUMMARY

Extensions	$3,707,402 67
Purification	240,000 00
New	551,738 31
Total	$4,499,140 98

Division of Sanitary Engineering

BULLETIN NO. 8

Further Experiments on the Fertilizing Value of Activated Sludge.

By H. D. BROWN, M.A.

Report upon the Relation of Iron to Activated Sludge

By G. H. W. LUCAS, B.A.

Report upon the Relation Between Gas Evolved and the Digestion of Sewage in Activated Sludge

By G. H. W. LUCAS, B.A.

Studies in Fly Control

By A. E. BERRY, M.A.Sc. and C. H. McLEOD, B A

Investigations in the Sanitation of Swimming Pools

By A. V. De LAPORTE, B.A.Sc.

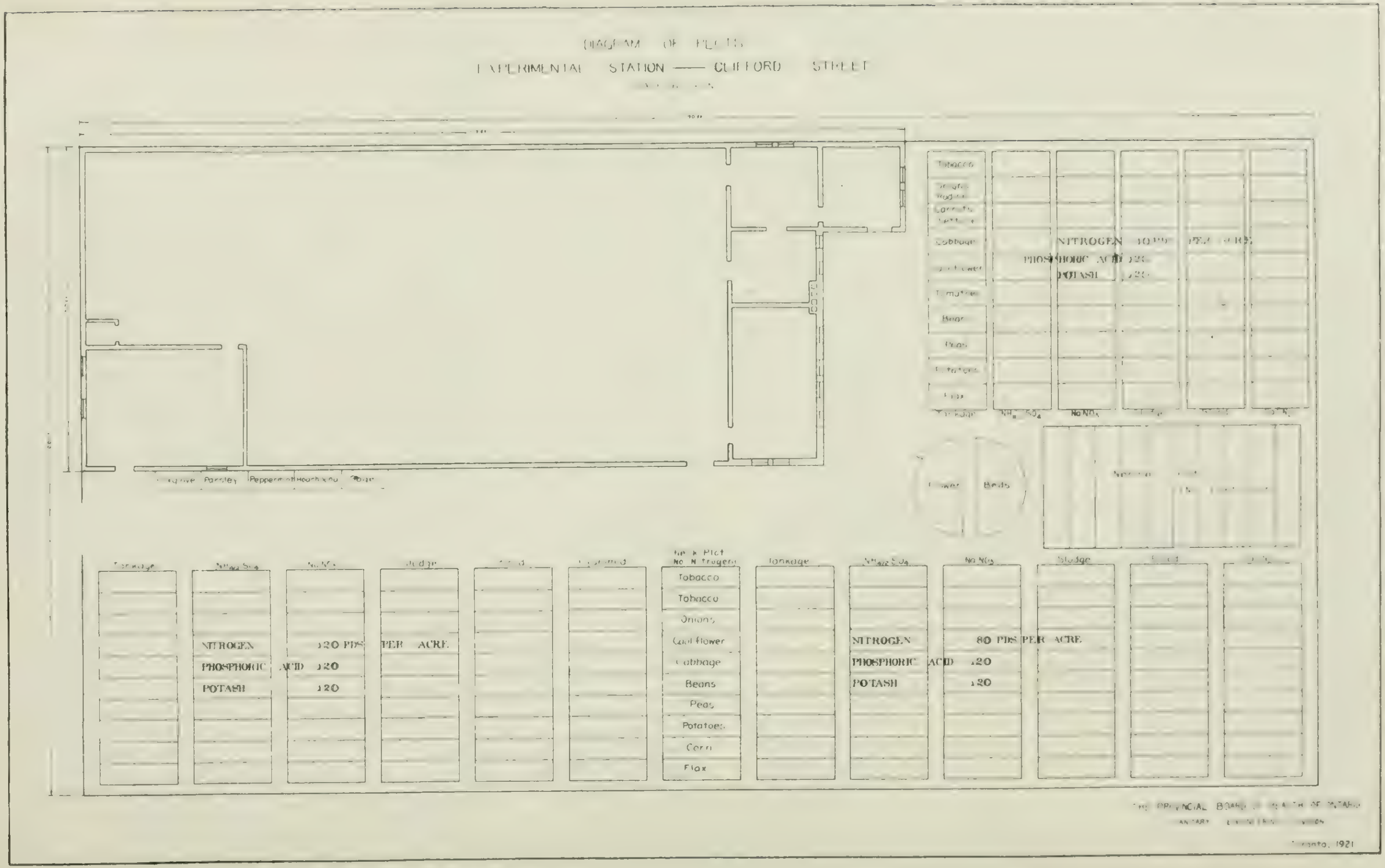


DIAGRAM OF PLOTS
EXPERIMENTAL STATION —— CLIFFORD STREET

FURTHER EXPERIMENTS ON THE FERTILIZING VALUE OF ACTIVATED SLUDGE.

Results of Experiments Carried Out during 1921, in Continuance of those Started in 1920 at the Provincial Board of Health Experimental Station, Clifford Street, Toronto.

BY H. D. BROWN, M.A.

OBJECT.

The field experiments undertaken in 1920 were duplicated in 1921 under conditions as similar as possible. The plots were laid out on the same areas and the nitrogenous fertilizers applied in the same quantities. The superphosphates and potash applications were omitted, for it was considered that the amounts applied in 1920 were sufficient to meet the needs of the crop during the 1921 season.

SOIL.

In regard to the soil, it was unfortunate that excavations and concrete work had to be done at the Experimental Station during the winter of 1920-21. This necessitated the dumping of large quantities of clay and cement material on several of the beds. Heavy trucks churned up the soil considerably in the N. 120 section. The ground was cleaned up as well as possible and all the plots were spaded over early in May.

FERTILIZERS.

The plots were again approximately 1/100 acre in size and received nitrogenous fertilizers as follows:—

TABLE I

Fertilizer.	% of Nitrogen	% of Water	N 40 Series	N 80 Series	N 120 Series	Date applied
Cyanamid	20	3	2 lbs.	4 lbs.	6 lbs.	May 5th
Dried Blood	10	10	4 "	8 "	12 "	May 18th
Dried Sludge	4½	10	9 "	18 "	27 "	" "
Sod. Nitrate	15	3	3 "	6 "	9 "	" "
Amm. Sulphate	20	3	2 "	4 "	6 "	" "
Tankage	5½	10	7½ "	15 "	22 "	" "

The cyanamid was applied two weeks previous to planting, as had not been possible in 1920.

PLANTING.

As shown in Table II, the plants were set out much earlier than in 1920, with the exception of corn. Corn was substituted for hemp, after two unsuccessful attempts to get a growth. The numerous sparrows in the vicinity accounted for practically every seed.

TABLE II

Plant	*Variety*	*Area*	*Date Sown*	*Date set out.*
Tomatoes	Earliana and Bonny Best	N 40-2 rows	......	May 31
		N 80 & 120-1 row	......	......
Flax	Simmers seed	4′ wide	May 20	......
Corn	Kendal	2 rows	June 19	......
Potatoes	Cobblers	2 "	May 20	......
Peas	Little Marvel	2 "	May 20	......
Beans	Dwarf Butter Wax	2 "	May 20	Replacing June 9
Cabbage	Early Jersey, Wakefield	1 row	March 23	May 23
Cauliflower	Early Snowball	1 "	March 23	May 23
Onions	Adnac	1 "	May 19	......
Tobacco	White Burley	2 rows	March 23	May 25

RECORDS.

The weekly grading of plots in each series was made, based on the appearance of the plants; their size, health, freedom from disease, color and general condition. The relative grading of those on the sludge plots is given in graphs. When mature or in a marketable condition the crop was harvested and weighings made. Table III gives the early maturity, based on the first marketable crops. Table IV is a summary of weighings showing also the percentage relation of sludge plot produce to the average of the plot series

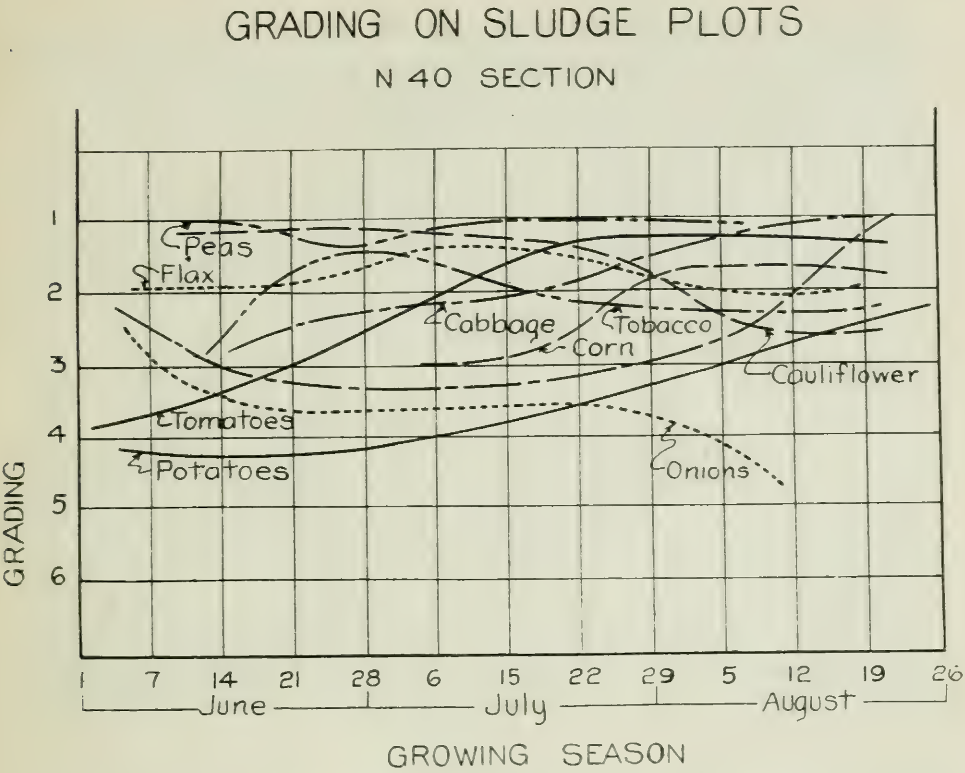
Hoeing, watering and spraying was carried on as seemed necessary throughout the season, and records of all noteworthy features made. Photographs 1-3, taken July 15th, show to some extent, the general arrangement and growth. In the case of tobacco a comparison is possible.

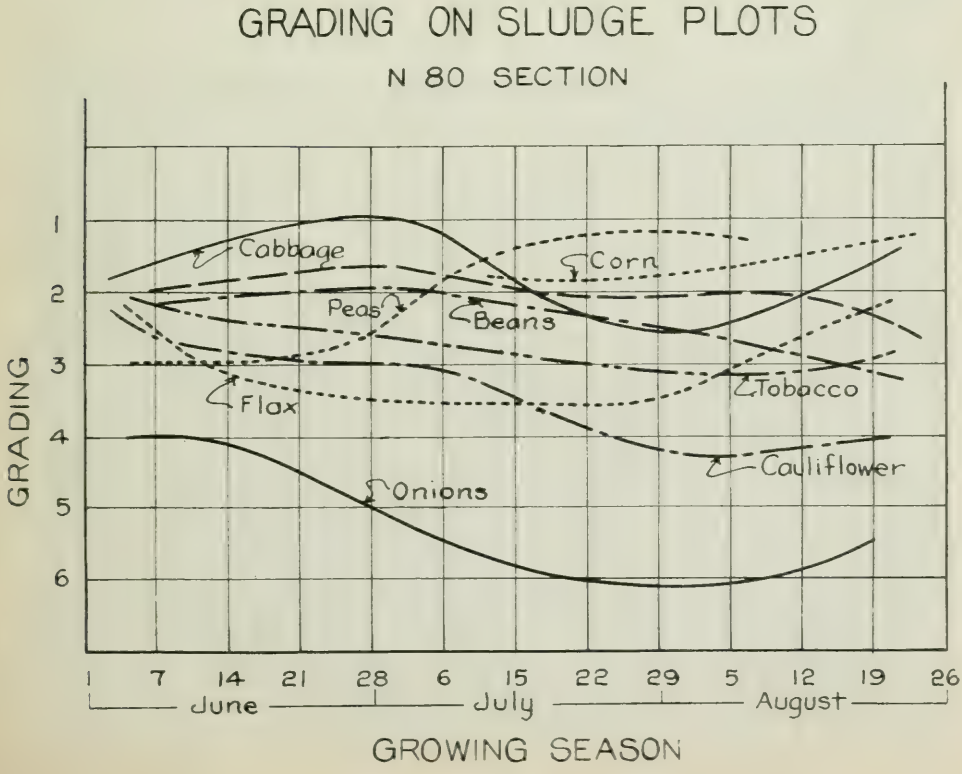
FLAX.

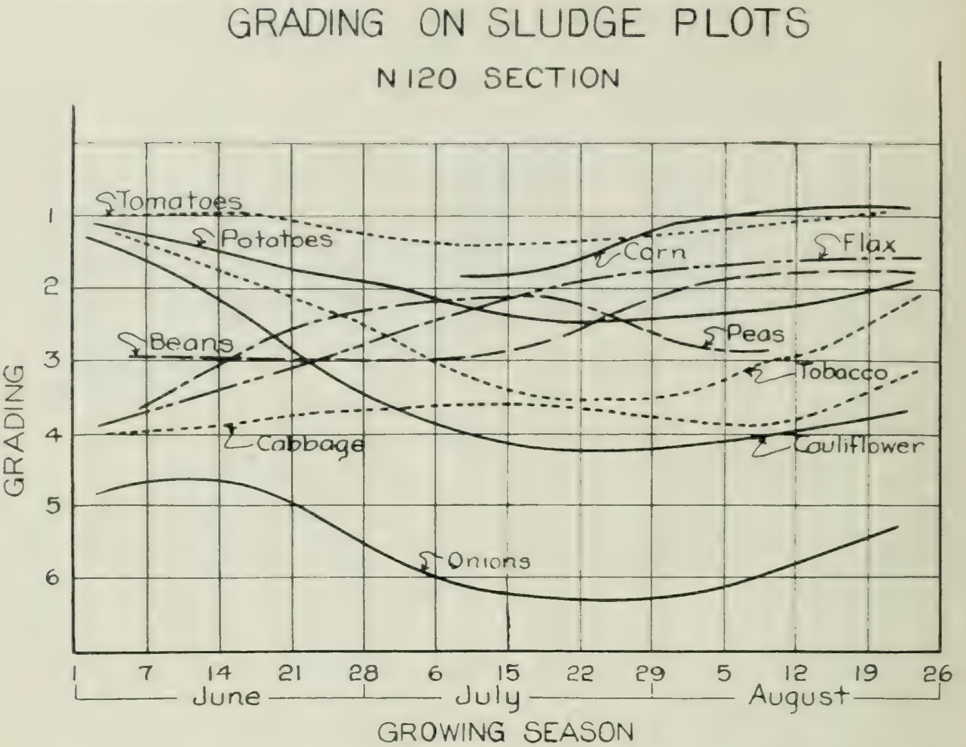
The flax was planted May 20th and was showing uniformly by May 27th, with slight advantage on the sludge, blood and tankage plots. The crop was in flower July 3rd, but was short and variable. All fertilized plots were superior to the check and normal plots. Later in the season, the N 40 plots, with nitrate and sulphate fertilizer, failed to maintain good growth. In general appearance the sludge plots maintained second place in their series throughout most of the season. The crop was light, with short stem. The weights from the sludge plots averaged up better than those from any other plots. N 40 gave 23%, N 80, 19% and N 120 1¼% above the average for that section, while the check and normal plot yields were 16% and 8% below the average. For flax, sludge continued to give results as good or better than any fertilizer used, both in appearance of plant and total yield obtained.

HEMP.

As another fibre producing plant, hemp was considered worth introducing. Strips four feet wide were seeded May 20th, but by June 10th practically no plants were visible: so the plots were resown that day. Flocks of sparrows were noticed on the plots, and again scarcely any plants appeared. As nothing practicable could be done, the plot space was utilized for corn.

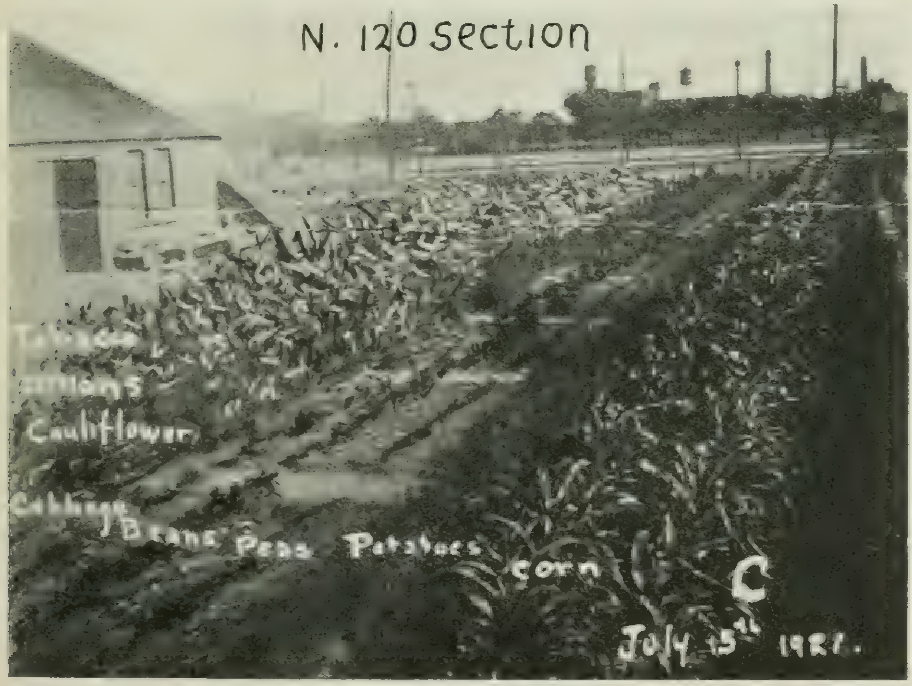

GRADING ON SLUDGE PLOTS
N 40 SECTION
GRADING
1
2
3
4
5
6
Peas
Flax
Cabbage
Tobacco
Corn
Cauliflower
Tomatoes
Onions
Potatoes
1
7
14
21
28
6
15
22
29
5
12
19
26
June
July
August
GROWING SEASON


GRADING ON SLUDGE PLOTS
N 80 SECTION
GRADING
1
2
3
4
5
6
Cabbage
Corn
Peas
Beans
Flax
Tobacco
Cauliflower
Onions
1
7
14
21
28
6
15
22
29
5
12
19
26
June
July
August
GROWING SEASON



NOTE.—The data from which the above graphs on "grading on sludge plots," were prepared is omitted owing to it's cumbersome nature and to the fact that the gradings are made on personal observation and judgment alone. Similar data was obtained for all other plots, but it is of value only as indicating the general trend of growth on each plot.

N 80 Section
B
July 15 1922


N. 120 section
Tobacco
Onions
Cauliflower
Cabbage
Beans
Peas
Potatoes
corn
C
July 15th 1922.

EARLY MATURITY—

		N40 Section						N80 Section			
		$CaCN_2$	Blood	Sludge	Nitrate	Sulphate	Tankage	$CaCN_2$	Blood	Sludge	Nitrate
Flax		6	4	2	5	3	1	5	4	2	3
Potatoes	Grading of Tops.	3	1	2	4	6	5	1	2	3	5
Peas		1	5	2	6	3	4	4	5	2	6
Beans		2	6	1	5	3	4	6	4	1	2
Tomatoes		4	5	2	1	3	6	5	3	1	6
Cabbage		5	6	2	1	3	4	3	1	2	4
Cauliflower		5	6	1	2	4	3	5	6	4	2
Onions		.....	no mat	urity.							
Tobacco	Grading	6	4	2	1	3	5	1	2	3	4
Corn	Grading	4	1	2	3	6	5	3	1	2	4

MARKETABLE PRODUCE—

		N40 Section						N80 Section			
		$CaCN_2$	Blood	Sludge	Nitrate	Sulphate	Tankage	$CaCN_2$	Blood	Sludge	Nitrate
Flax	Wt. in oz.	80	78	85	51	46	75	62	88	100	86
	Rel. to Average	......	......	+23%	......	......	......	......	......	+19%	......
Corn	No. Cobs.	10	15	15	10	3	6	21	21	15	22
	Av. Wt. Cobs, Oz.	7	5.5	6.5	7	5.5	3	7	6	7	5
	Wt. Stalks., lbs.	14.5	18.5	15	18.5	13	7	28	28.5	29.5	23.5
	Rel. to Average	......	......	+7%	......	......	......	......	......	+22%	......
Potatoes	Weight	86	62	58	48	51	128	151	152	150	64
	Rel. to Average	......	......	+19%	......	......	......	......	......	+13%	......
Peas	Wt. in oz.	27.5	19	20	12	14.5	10.5	36	31.5	32	19
	Rel. to Average	......	......	+14%	......	......	......	......	......	+18%	......
Beans	Wt. in oz.	20	4.5	14	10.5	10.5	18	20.5	27	37	39
	Rel. to Average	......	......	—4%	......	......	......	......	......	+24%	......
Tomatoes	Wt. in lbs.	35.7	42	41	33.5	26	27.5	27.5	41	39	32.2
	lbs. per Vine.	4.5	5.2	5.1	4.2	3.2	3.5	5.5	8	8	6.5
	Rel. to Average	......	......	+21%	......	......	......	......	......	+20%	......
Cabbage	No. Mature	4	3	3	8	10	3	9	6	4	7
	Wt. in lbs.	12	7	14.5	26	34	3	34.2	23.7	17.2	22.5
	Wt. per Plant	3	2.3	4.7	3.2	3.4	1	3.7	4	4.2	3.2
	Rel. to Average	......	......	+52%	......	......	......	......	......	+13%	......
Cauliflower	No. Plants	1	1	3	3	1	2	1	3	1	4
	Wt. in oz.	6	6	3.8	2.8	9	1.9	6	2.2	9	7.1
	Average Wt.	6	6	18	13	9	13	6	11	9	28
Tobacco	Wt. Tops., oz.	48	86	90	86	70	60	136	120	128	80
	Wt. leaf., oz.	192	276	316	334	233	208	456	490	476	416
	Total Wt., oz.	240	362	406	420	303	268	592	610	604	496
	Rel. to Average	......	......	+24%	......	......	......	......	......	+20%	......

TABLE III

N-120 Section

Sulphate	Tankage	CaCN2	Blood	Sludge	Nitrate	Sulphate	Tankage	Normal	Check
6	1	2	4	1	5	3	....	....	....
4	6	1	4	2	3	5	6	....	....
1	3	2	1	3	6	5	4	....	....
3	5	6	5	1	3	2	4	....	....
4	2	5	3	1	4	6	2	....	....
6	5	6	3	1	2	4	5	....	....
1	3	1	6	2	4	5	3	....	....
....	....	....	....	....	....	....	....	....	....
5	6	6	2	1	4	5	3	....	....
5	6	1	3	2	4	5	6	....	....

TABLE IV

N-120 Section

Sulphate	Tankage	CaCN2	Blood	Sludge	Nitrate	Sulphate	Tankage	Normal	Check
91	80	73	72	74 .... 1.2%	65	81	....	63 —16%	69 —8%
18 5.5 21.5	24 5.5 24	24 6.5 26	21 5.5 23.5	18 6.5 26 ....0..	21 6 26	20 6 29	8 6 27	29 5.7 20 —5%	26 5.5 18 —15%
96	180	128	170	164 +45%	94	86	40	108 ......0..	....
24.5	11.5	22.5	29	23.5 +18%	13.5	15.5	11	23 +15%	23.5 +17%
40.5	15	17.5	23	19 ....0..	14.5	30.5	14	13 —30%	18.5 +3%
26.7 5.2	29 6	33 6.5	30 6	37 7.5 ..22%	34.2 6.7	23.5 4.7	23.7 4.7	25.2 5 —20%	26.5 5.2 —18%
8 28.5 3.5	8 32.5 4	10 39.5 4	10 31.5 3	9 36.5 4 +14%	8 25.2 3.2	9 27.7 3	7 26 3.7	9 27 3 —4%	6 19 3.1 .. 0..
2 2 16	4 7 28	3 5.2 26	3 4.7 20	3 3.8 18	3 2.8 13	1 3.1	1 4	4 4.1 16	5 5 16
96 362 458	92 206 298	100 363 463	86 406 492	101 360 461 +1%	58 337 395	64 337 401	146 382 528	66 194 260 —43%	60 298 358 —19%

CORN.

The corn was planted June 18th, on the hemp areas, and made a uniform showing very soon. By July 8th a grading was possible in which sludge plot corn was ranked second and dried blood plot corn, first. Tankage also gave good results. The N 80 plots gave the best growth and in yield the sludge ranked first. Cyanamid and blood yielded well, and apart from a poor soil section in N 40, 5 and 6 all were well above the check and normal plots. For corn, sludge appears to be a satisfactory fertilizer, judging from these experiments.

POTATOES.

The potatoes in the 1920 crop were very small, but were kept for seed and used in 1921. The resultant crop was again light and the potatoes very small. Soil acidity was thought a possible factor, but the soil on test showed only a very slight acidity and low lime requirement. A light application of lime up to one-half ton to the acre would be beneficial, but this factor could not have controlled the development. The top growth was good throughout the season, but the wilting occurred early. It is believed the cause of small tubers was due rather to excessive drainage and lack of subsoil depth. Ashes and loosely packed material lie close to the surface soil.

The potato plants ranked second or third throughout the season, with blood and cyanamid giving more luxuriant tops. The N 40 section was low in yield and the check plot average. The sludge plot yields compare favourably with other fertilized plots, but other than nitrogenous fertilizers play the most important part —namely, potash and lime.

PEAS.

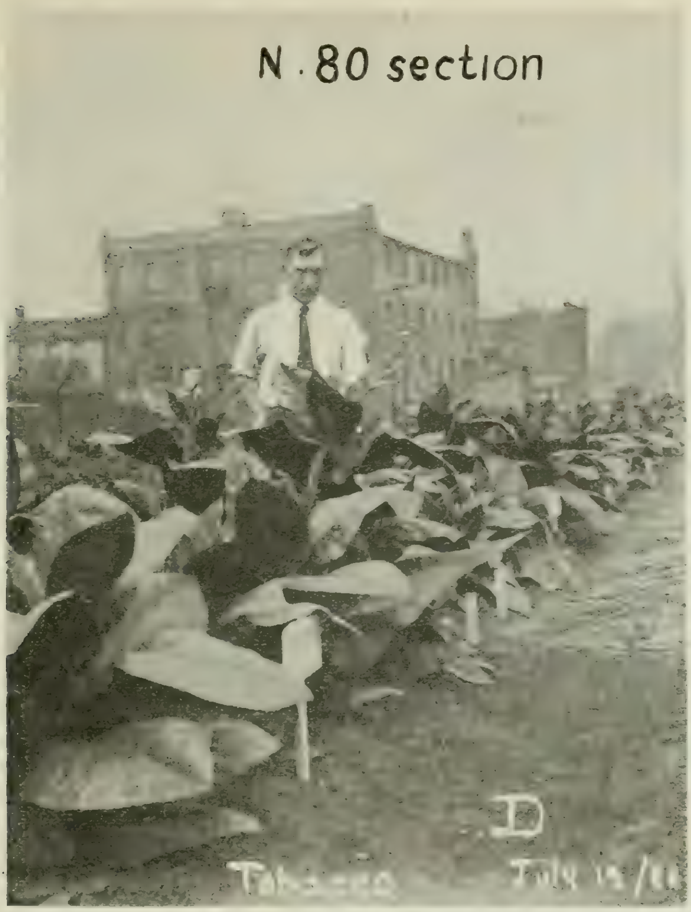
As in 1920, the peas on the sludge plots grew well from the beginning and averaged a good growth throughout the season. As was general throughout this section of the province, the season was short and all flowering was completed within one week, instead of a month in normal seasons. The weights are consequently low and the variation lessened. Sludge yielded well above the average, but the check and normal plot yields were also, probably showing, to some extent, the independence of a leguminous plant to soluble nitrate supply.

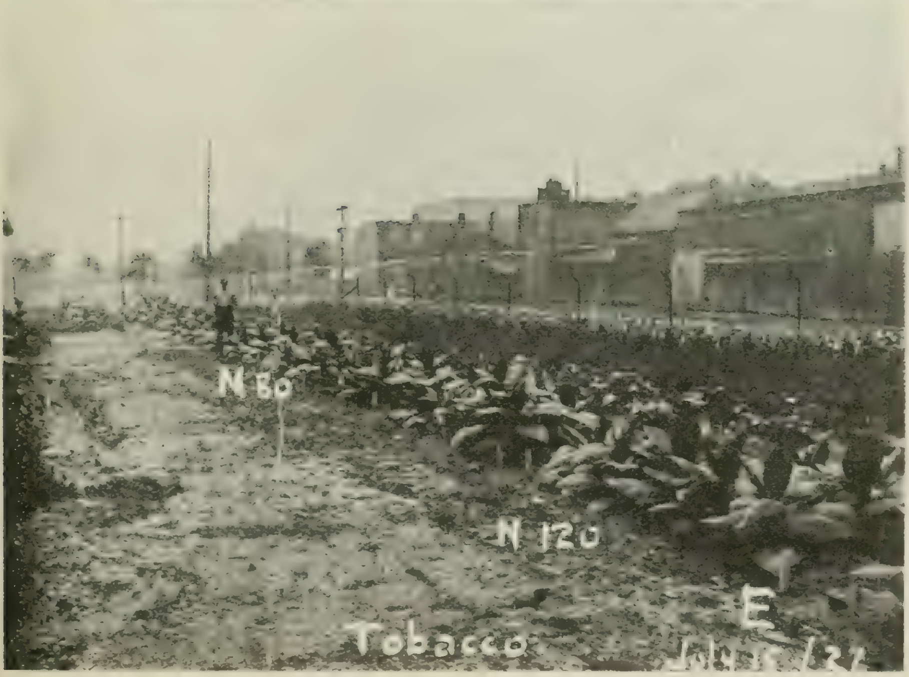
BEANS.

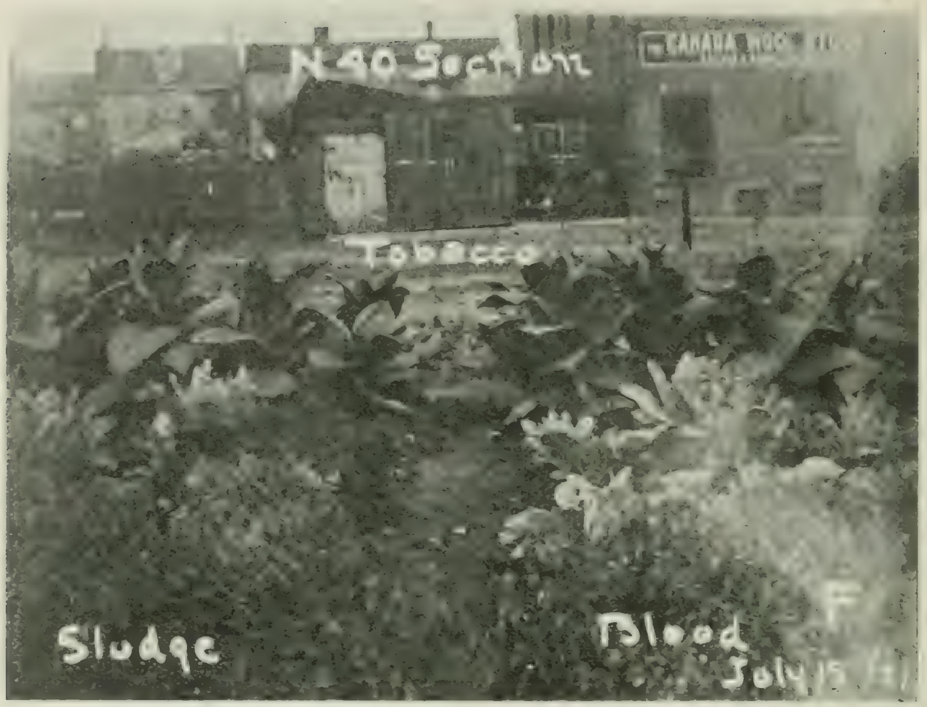
Despite the precaution to prevent early infection of seedlings, by kerosene treatment, many plants were infected. These were replaced, but the loss was again considerable, especially in the N 40 section. The earliest marketable pods were on the sludge plots and the appearance of these plots were above the average. Nitrate and sulphate gave good results and the N 80 section was better than the N 40 or N 120 sections. Eighty lbs. per acre seems sufficient for beans on this type of soil.

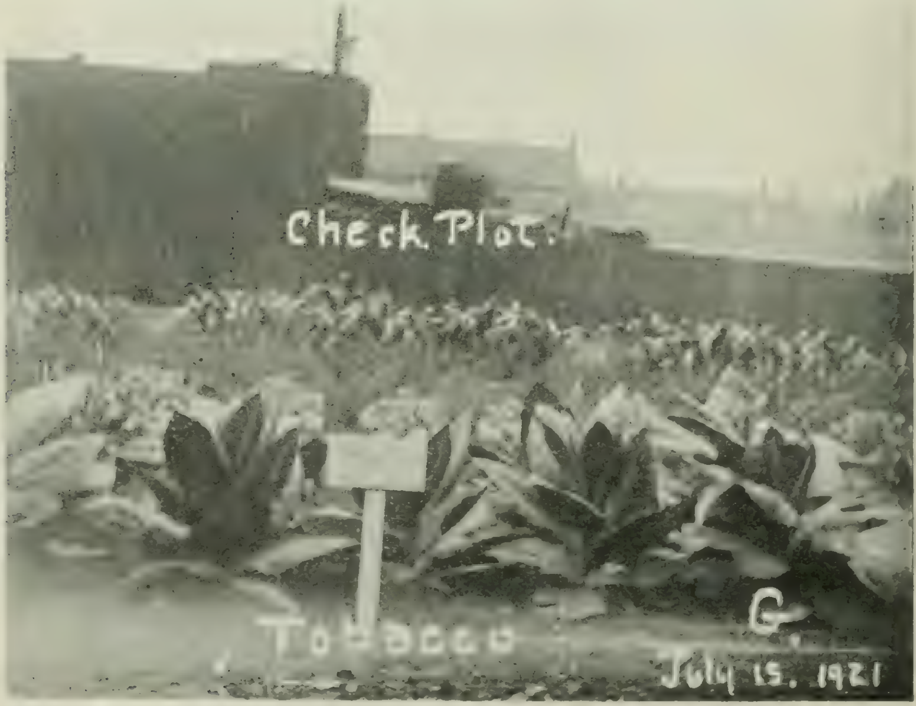
TOMATOES.

Seed was sown in the greenhouse on March 23rd and the transplanting done on April 6th. These plants were in good condition early in May, when they were moved to the Experimental Station. A period of cold, windy weather


N.80 section
D
Tobacco
July 15/22


N 80
N 120
E
Tobacco
July 15/22


N 40 Section
Tobacco
Sludge
Blood
F
July 15 '21


Check Plot.
Tobacco
G.
July 15. 1921

occurred and with no adequate shelter the plants were mostly a complete loss. A uniform plant was obtained commercially and set out on May 9th. The vines on the sludge plots did well throughout the season—gave an early crop as well as the heaviest crop. Tankage ranked next in early production, but gave a lower weight of crop. The N 80 and N 120 sections were the heaviest producers, and all fertilized plots gave yields noticeably heavier than those of the check and normal plots. The quality of the tomatoes was good throughout, medium sized, but firm and juicy—a feature of abundant nitrogenous food. At the close of the season the blood and cyanamid vines had more unripened fruit than any of the others. Sludge thus seems to give stimulus to early growth and maturity as well as to total yield.

CABBAGE.

The weather at planting time, though not so disastrous as in the case of tomatoes, was hard on the young cabbage and cauliflower plants. They survived, however, and matured. The variableness of yield and number of maturing plants may be accounted for by the inauspicious start. The plants reached maturity much later in the season than the crop of the year previous, planted much later. The number of mature plants was low. The fertilized plot yields were above those of the check and normal plots. Blood and sludge gave good early appearance and above average weights. This plant is benefitted by heavy applications of fertilizer, and sludge is quite satisfactory.

CAULIFLOWER.

The number of plants which matured was very low, as well as variable. Despite early planting, the plants did not grow well and did not produce heads until a second growth of leaves occurred late in August. Early in the season the plants looked well, but did not maintain their growth. The proximity to tobacco plants is believed to be the reason for lack of development, for the tobacco plant roots were found to extend out under the caulitlower plants and had an effect similar to that on onions.

ONIONS.

Onion seed was planted May 19th and germinated well. The plants grew normally for a few weeks and then stopped growth and, later, lost in substance. The onions had been planted close to the tobacco plants, which grew fast, and as their rapid growth was coincident with the onion failure, they were thought to be the cause. On examining the soil beneath the onions it was found to be permeated with tobacco roots. These roots extended several feet in every direction and doubtless robbed the onion plants of nourishment—both moisture and nutriment. Onions are particularly susceptible to nitrogenous elements, and the small plants soon succumbed.

TOBACCO.

White burley seed was sown on March 23rd and the plants set out May 25th. The growth was rapid throughout the season and the root system extensive. On the sludge plots the plants were average during the early part of the season, but improved later especially in the N 80 section. Photographs taken July 15th show a marked superiority of the sludge plot over the check. In the N 120 section the soil shallowness was effective and the plants smaller. The tankage plot here gave a very heavy yield. There is little doubt that nitrogenous fertilizer plays a large part in the growth of tobacco, and sludge furnishes this in an available form and should be applied in large amounts.

GENERAL.

As has been noted previously some fertilizers possess the important quality of giving early acceleration in growth, to a much greater extent than others. To start the plant in a medium where it can easily obtain the plant food necessary for rapid growth, influences its total growth and maturity. A later available food will not make up for this deficiency nor produce as great a yield. In the light of the experiments in 1920 and 1921, sludge can be claimed to possess this feature, probably to a greater extent than any of the other nitrogenous fertilizers used. This is, then, a marked advantage possessed by activated sludge which should make it valuable for germination work, hothouse beds, seedlings and early marketable produce.

As regards residual effect of plant food in fertilizers, applied in earlier years, it is well known that nitrogen as nitrate is extremely soluble, and is readily lost in drainage water. The existing conditions during the above experiments made it impossible to judge between the residual effects of sludge as compared with the other fertilizers. One season's effect would in any case not be sufficient to justify conclusions.

The open, porous and variable subsoil and the limit in number of plants, make conclusions difficult, but the results justify large experimental trials where individual variations are subservient to the general character of the crop.

In general, the results of the 1921 experiment bear out the conclusions from the 1920 experiment, and it is hoped that this product, "Activated Sludge," may soon be available for commercial use. The interest taken in the exhibit at Toronto National Exhibition justifies the assumption that the crop producer is alive to the value of fertilizers and that municipalities are anxious to improve their sewage disposal systems and return to the public the valuable by-products of sewage.

Explanation of diagrams, tables and photographs.

1. Diagram of plots in area under experiment.
2. Table I—Weights and contents of fertilizers used.
3. Table II—Varieties of plants and dates of planting.
4. Table III—Table of early maturity—grading of first marketable produce, by sections.
5. Graph N 40 section—showing relative appearance of vegetables on sludge plot throughout the growing season.
6. Graph N 80 section similar to 5.
7. Graph of N 120 section similar to 5.
8. Table IV—Weights of marketable produce showing the percentage on the sludge, check and mormal plots, relative to the average.
9. Photographs A-H.
    (*a*) General view of N 40 section—July 15th, 1921,
    (*b*) General view of normal and N 80 plots, July 15th, 1921,
    (*c*) General view of N 120 section,
    (*d*) Tobacco plants N 80 section, July 15th,
    (*e*) Tobacco plants N 120 section, July 15th,
    (*f*) Tobacco plants N 40—sludge and blood plots,
    (*g*) Tobacco plants check plot (no nitrogen), July 15th,
    (*h*) Tobacco plants N 40—sludge plot, July 15th.

THE RELATION OF IRON TO ACTIVATED SLUDGE.

By George H. W. Lucas, B.A.

During the activation of sewage in an iron tank at the Experimental Station, Toronto, a sludge was developed quite distinct in properties and color from the sludge which formed in the main tanks. It was well nigh ideal in that it met the conditions recommended in a biography on activated sludge, namely, it was golden brown in color, gave a clear, sparkling effluent and was stable for a period of time.

A litre of sludge from the main tanks settled in one hour to about 20% solids and gave a clear supernatant liquid but after four to eight hours rose to the surface due to gas formation. A sample of the same sludge activated in the iron tank settled more rapidly than the former sludge, gave a clearer supernatant liquid and remained at the bottom for over a month. At the end of that time it gave no indication of rising.

Immediately the presence of iron suggested itself and analysis showed that the ordinary sludge had 2.0% iron on a dry basis and 6.1% of the ash was iron, while the new sludge was 5.1% iron on a dry basis and its ash was 14.9% Fe. Evidently iron was playing an important part in this sludge process.

An analysis of the raw sewage showed only four parts per million of iron present. This did not account for all the iron present in the sludge; so therefore some iron must have come from the tank. Having in mind all the possible reactions, it was very difficult to predict any certainty how iron became deposited in the sludge. Three possibilities presented themselves, viz, by bacterial action, by chemical precipitation, and lastly, by small pieces of rust catching in the sludge.

A search of the literature on iron bacteria gave very little encouragement. Biologists still disagree on the theory that some bacteria deposit iron. An iron deposit is found on the sheath of this bacterium, but whether iron is absolutely essential to the life of this organism is not positively known. The best references found were in a work by Harder, and the following extracts have been taken from his publication:

WORK OF HARDER.

1. Harder[1] concludes that according to present knowledge there are three principal groups of iron depositing bacteria. Those that precipitate $Fe(OH)_3$ from solution of ferrous bicarbonate, using the CO_2 set free and the available energy of the recreation for their life processes.

Those that do not require $Fe\ CO_3$ for their vital processes but do cause the deposition of $Fe(OH)_3$ when either inorganic or organic salts are present.

Those that attack iron salts or organic acids using the organic acid radical as food leaving $Fe(OH)_3$ or basic ferric salts that gradually change to $Fe(OH)_3$

Bacillus M_7 was discovered by Mrs. Mumford* during an examination of iron bearing colliery waters in England. It consisted of $Fe(OH)_3$ of fine granular texture with some scattered threads of higher iron bacteria. After various inoculations of this granular material in culture media a bacillus was isolated which produced an enzyme that had the power of precipitating $Fe(OH)_3$ from either ferrous or ferric solutions. Mrs. Mumford states that she succeeded in isolating the enzyme from the organism by filtration.

Crenothrix, the largest of iron bacteria can live in a water which has less than two parts of iron per million. Leptothrix is a simple thread form whose sheaths are a yellowish brown $Fe(OH)_3$.

THEORIES OF IRON DEPOSITION BY BACTERIA.

Several explanations have been offered for the deposition of $Fe(OH)_3$ by iron bacteria. Some investigators believe that the precipitation is merely a chemical process in no way connected with the internal activity of the cell, whereas others claim that the process is one of oxidation of ferrous to ferric compounds and that it is necessary for the life processes of the organisms. Among the first to study the activities of iron depositing thread bacteria were

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*Can. Engineer 28, P. 336 states that these experiments were conducted by Mr. E. M. Mumford. Mr. F. A. Dallyn, C.E., M.E.I.C., Director of the Sanitary Engineering Division, Toronto, states this is an error, and authorizes quoting Mrs. Mumford.

Cohn and Zopf[3]. Cohn believed that $Fe(OH)_3$ was deposited as a result of the activity of the living cells and that a deposition occurred in the same manner as the deposition of silica takes place in the tests of diatoms. Zopf[4] some years later stated that he found $Fe(OH)_3$ being deposited on empty sheaths from which all living cells had been removed. He was of the opinion, therefore, that the storing up of $Fe(OH)_3$ in the sheaths was merely the result of mechanical processes, the iron compounds being taken up by a mucilaginous coating on the sheaths. Later, Winogradsky[5] investigated the physiology of iron bacteria. Experiments were conducted with leptothrix and in the publication of his results, in 1888, he states that leptothrix will live and grow only in solutions in which iron is present in the ferrous form, and that only where living cells are present in a sheath is there any coloration of the sheath due to oxidation of ferrous salts. He also found that the sheaths did not take up mechanically any $Fe(OH)_3$ that may be present in the solution and believed that the coloration is due to $Fe(OH)_3$ being given off by the cells and caught in the sheath which encloses them. He concludes from this that the oxidation of ferrous compounds to form $Fe(OH)_3$ is necessary for the life and the growth of the organisms and that this process furnishes energy to the cell for the assimilation of food which consists of organic compounds of which he found only a small amount was necessary. He worked with solutions of ferrous carbonate.

Molisch[6] in a series of experiments proved that leptothrix will grow profusely in an iron-free medium, forming perfectly colorless sheaths. If iron or manganese were present he found they were oxidized and taken up by the sheaths. He likewise found that iron or manganese present in the solution causes longer and thicker threads and that sheaths containing live cells accumulate $Fe(OH)_3$ more abundantly. However, threads in which the cells have been killed by boiling in water are still capable of taking up $Fe(OH)_3$ in their sheaths. He determined further that where there was little chance of oxidation a ferrous compound would accumulate in the sheath and cause the same luxuriant growth as $Fe(OH)_3$. He concludes that these organisms show a marked physico-chemical attraction for iron and the manganese compounds and that the change from ferrous to ferric compounds is due to simple oxidation and is not connected with the life processes of the cells, as Winogradsky claimed. He claims that the living cells probably have some influence in keeping the sheaths in a condition in which it can accumulate $Fe(OH)_3$ more easily than the empty ones.

Ellis[7] in 1907 set forth his belief that the deposition of $Fe(OH)_3$ around bacterial threads is purely mechanical. He believes that Winogradsky had no solid basis for his conclusions and thinks, with Zopf, that the accumulation is the result of the catching up of the particles of $Fe(OH)_3$ present in the water by a mucilaginous covering which surrounds the sheath. The presence of such a sheath was demonstrated by Zopf in 1878. Ellis, like Winogradsky, worked principally with leptothrix, but also examined other cultures, but believes that what is true of leptothrix is true of all iron bacteria.

Lieske[8] in 1911 experimented with spirophyllum, a culture with which Ellis also worked. He finds this organism will grow only in solution containing $Fe CO_3$ and that other ferrous salts will not take the place of $Fe CO_3$. He finds that much organic matter may completely stop the growth of spirophyllum, but that where abundant CO_2 is present in water and organic matter is entirely absent this organism will grow profusely. He claims that the carbonate radical furnishes food for the spirophyllum and that the latter oxidizes the $FeCO_3$ to $Fe(OH)_3$ mainly for the purposes of obtaining carbon. Like Winogradsky, he believes that the oxidation may furnish energy to the organism for the assimilation of food, which in this case is CO_2. Mrs. Mumford in 1913 states that Bacillus M_7 forms a precipitate of $Fe(OH)_3$ in ferric as well as ferrous solutions. Organic compounds were used as a source of food. $Fe(OH)_3$ was precipitated only under aerobic conditions, and under anaerobic conditions the hydroxide was somewhat dehydrated. She ascribes these reactions to an enzyme which she states she succeeded in isolating from the organism by filtration. The observations of Mrs. Mumford are open to doubt, because she did not use control cultures, and the possibility of chemical oxidation taking place in the ferrous solutions has not been eliminated.

After failure to identify any of these iron organisms by microscopic examination a thorough search was made through the literature to see if iron had played any role in the activated sludge process. Several references[9] were discovered where chemists had found from nine per cent. to eighteen per cent. iron in sludge on dry basis. Most encouraging of all were some publications by G. J. Fowler from his laboratory at Manchester. An extract from Can. Eng. 28, p. 336, is as follows:—

"An interesting development is that described by Dr. Gilbert Fowler and Mrs. Mumford, of Manchester. They found that by innoculating a tank effluent with an organism M_7 and adding a small dose of ferric salt—1 grain per gallon—blowing air through for six hours and allowing to stand for six hours for precipitation, a very clear liquor could be obtained. This organism is found in nature in waters impregnated with iron and once its growth is established there does not appear to be any difficulty in maintaining it." Again in Can. Eng. 30, p. 228. "It would appear that the activated sludge process consists broadly of three operations—a clotting or clarifying action, a rapid carbon oxidation and finally nitrification. It is probably to some extent the result of the activity similar in character to the M_7 organism which was definitely shown to depend on enzymic action whereby traces of iron appeared to start floccation of the whole sewage. The M_7 bacillus is fairly ubiquitous as it has been found that sewage containing iron and a certain amount of activated sludge, but in which clarification has not been effected, can be made to clarify at once by a small quantity of properly activated sludge."

Owing to the claim that M_7 was fairly ubiquitous it was concluded that this organism must be present and a small sample of effluent was treated with a little ferrous sulphate and aerated in a tall glass cylinder fitted at the base with filtros. Iron was precipitated and a clear effluent obtained. Microscopic examination again failed to reveal an organism to which this peculiarity could be attributed.

The presence of M_7 was doubtful and in order to determine if M_7 were responsible a quantity of sewage was boiled for one hour, some iron salt added and aeration begun. It was the expectation that there would be no deposit of iron, but the same result was obtained as with unsterilized sewage. Apparently some factor other than M_7 was present.

Chemical precipitation seemed to be the only explanation. It has been proved that in the activation process much ammonia is evolved, which would naturally make sewage alkaline. Then, there are other sources by which alkali gets into the sewage. Tests of the plant effluent showed an alkalinity as high as 200 p.p.m.

IRON PRECIPITATED BY ALKALINE SEWAGE.

In order to see if chemical precipitation of the iron in Toronto sewage were connected with the alkalinity, three tall cylinders fitted with filtros were filled as follows and aerated:—

TABLE NO. 1

No. 1—300 cc. Distilled Water.	No. 2—300 cc. Boiled Effluent.	No. 3—300 cc. Effluent made just acid with—
0. 5g of $FeSO_4$ $7H_2O$.	O. 5g of $FeSO_4$. $7H_2O$.	H_2SO_4+0.5g of $FeSO_4$. $7H_2O$.

These were aerated four hours.

No. 1 showed no change.

No. 3 showed no change, i.e., no precipitate.

No. 2 turned brown very rapidly and a precipitate came in a few seconds—quite a heavy precipitate in four hours.

In order to demonstrate the formation of the flock in the presence of iron the following experiment was performed.

2,500 cc. of sewage containing four p.p.m. iron and of 150 p.p.m. alkalinity were aerated sixteen hours in a tall glass cylinder fitted with filtros. At the same time a 300 cc. sample of this sewage was aerated after 0.5 g. Fe SO_4 $7H_2O$ was added. At the end of fifteen hours the large tube had a small grey flock, but the small one had a large golden brown one.

There remained one way yet in which it could be decided whether bacteria or chemical precipitation was responsible for the iron deposition in Toronto sewage. A sample of sludge was washed six times with tap water to free it from any alkaline solution. It was then washed with distilled water and dried on a Buchner filter. The sample was put in one litre of water and was well shaken. It was neutral to litmus. By this means a large amount of bacteria were introduced. A 300 cc. sample of this together with 0.5 g. of Fe SO_4 $7H_2O$ was aerated for twelve hours with no change apparent in the flock. When a few cubic centimetres of alkali solution were added a brown color was imparted to the sludge in a short time.

The next step was to find the effect of sewage on iron itself during aeration. Four five litre tubes fitted with filtros were treated as follows:—

TABLE NO. 2

	Tube 1	Tube 2	Tube 3	Tube 4
Amount raw Sewage	4 L.	4 L.	4 L. Boiled Sewage	4 L. Boiled Sewage
Iron present . . .	5 strands clean soft iron wire no trace of rust.	None	5 strands clean soft iron wire free from rust.	None

TABLE NO. 2—*Continued*

	Tube 1	Tube 2	Tube 3	Tube 4
Time of aeration 2 Hours.	Quite Brown, Distinct Flock.	Very Little Change.	Distinct Brown Flock.	Very Little Change.
3 Hours	Brown Colour more pronounced.	Very Little Change.	More Brown Flock.	Very Little Change.
Estimation of Iron in Flock after 4 Hours.	35 p.p.m.	8 p.p.m.	15 p.p.m.	8 p.p.m.
24 Hours.........	35 p.p.m.		46 p.p.m.	
72 Hours.........	63 p.p.m.		60 p.p.m.	

The wide variation in figures may be due to the fact that it was hard to get a uniform sample of the flock.

Autoclaved sewage aerated in the presence of iron wire behaved the same as raw unsterile sewage. A 300 cc. sample of autoclaved sewage (at 18 lbs. for 35 min.) when aerated in the presence of a clean sterile coiled iron wire became brown in color in fifteen minutes. In one and one-half hours there was sufficient flock to settle rapidly. This flock when examined microscopically gave no evidence of bacteria present.

That the presence of iron characterizes the color of the flock, aids in clarification, rapid settling and in keeping down the flock is shown by the data in the following series of experiments. (See tables III. and IV.)

Settling Rapidity—3 and 4, fast and clear; 2, rapid but not so clear; 2, 3 and 4, more rapid than No. 1; No. 6, more rapid and clearer than No. 5. The sludge varied in color from yellowish brown to dark brown, depending on the iron present.

The presence of iron apparently increased the total nitrogen in the sludge. A large sample of sludge aerated for three days gave total nitrogen on a dry basis 4.2%, 4.6%, 4.8% on each of the three days. Iron was added to this and aeration continued for three days. The total nitrogen then was 5%, 5.5%, 5.7% at the end of each day.

The moisture content of the sludge was not changed by the presence of iron. Samples of ordinary and iron sludge were centrifuged and both ran from 91-92% moisture. The rate of evaporation from equal amounts of ordinary and iron sludge in dishes of the same size at a temperature of 110° C was determined and gave but little difference. For a period extending two and one-half hours the rate of the ordinary sludge was 0.160 g. of water per minute, while that of the iron sludge 0.165 per minute.

Finally it was deemed advisable to analyze sludges from different activated sludge plants in the United States. Samples of dried sludge were obtained and the following table gives the result of the analyses:—

Color varies with per cent. of iron from grey black to chocolate brown. Worcester reddish brown.

In the table No. IV. it would hardly be fair to use the total nitrogen figures for comparison, for they would depend a great deal on the drying and age of the dry sludge.

TABLE III.

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Amount of Sewage and Sludge	5 Litres	5 Litres	5 Litres	5 Litres	2,700 Gal.	2,700 Gal.
State	Raw and Partly act'd	Raw and Partly act'd	Raw and Partly act'd	Raw and Partly act'd	Raw and Partly act'd	Raw and Partly act'd
Iron Present	None	5g$FeSO_4$. $7H_2O$	2.5g$FeSO_4 7H_2O$	Iron Wire Coil	None	18 lbs. $FeSO_4$. $7H_2O$
Time of Activation	4 Hours	4 Hours	4 Hours	4 Hours	3 Days	3 Days
Time Elapsing Before Rising after Settling	4 Hours	24 Hours	24 Hours	23 Hours	5 Hours	Circ 7 Days
Effluent	Effluent Like 5	Slightly Yellowish Effluent	Clear Effluent	Clear Effluent	Small Particles Floating	Clear Effluent

TABLE IV

	Houston	Toronto	Urbana	Milwaukee	Cleveland (1)	Cleveland (2)	Worcester
Dry Basis % Fe	1.1%	1.65–2.0	2.3	4.8	13.36	17.29	19.04
%N	4.3	3.3	4.18	4.31	3.2	5.7	3.0
Non Volatile	35.3%	50.2%	40%	46.4%	56.0%	8%	38.6%
Volatile	64.7%	49.8%	60%	53.6%	44.0%	51.2%	61.4%
Iron p.p.m. of Sewage	No Data	4 p.p.m.	No Data	10–100 p.p.m.	0–	300 p.p.m.	No Data

GENERAL CONCLUSIONS.

As a result of this investigation it is quite evident that iron plays a very important role in the activated sludge process and the difference in iron content explains the difference in color, flocking and settling of the various sludges which are formed in activated sludge plants.

Attention is also drawn to the M_7 organism and question is raised as to the necessity of its presence to begin floccation of iron since the sewage itself is alkaline and thus forms the hydrate. Finally, it is worthy of note that iron pipes are very readily oxidized by the alkaline sewage in the presence of oxygen.

The author desires to express his thanks to Mr. F. A. Dallyn, Director of the Sanitary Engineering Division, Toronto, and to Mr. A. V. Delaporte, chemist in charge of the Experimental Station, under whose personal supervision this investigation was conducted.

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The Activated Sludge Process of Sewage Treatment, E. J. Potter.

THE RELATION BETWEEN GAS EVOLVED AND THE DIGESTION OF SEWAGE IN ACTIVATED SLUDGE.

BY GEORGE H. W. LUCAS, B.A.

In the spring of 1921 an attempt was made to determine the relation existing between the composition of the gas evolved and the digestion of the sewage in the activated sludge tanks at the Government Experimental Station, Stanley Park, Toronto.

The percentage of carbon dioxide was relatively small, and in order to measure it accurately eighteen litres of the gas were passed through Baryta water and the CO_2 determined from the amount of barium carbonate precipitated. The oxygen percentage was measured in the ordinary way, using alkaline pyrogallol. Nitrogen was estimated by difference, since no methane or carbon monoxide were present.

A preliminary investigation on the sludge tank (data in Table 1) indicated that the amount of carbon dioxide and oxygen in the escaping gas was dependent on the quantity of air used as well as the amount of oxidizable matter present. At any one place in the tank, the percentages of CO_2 and O_2 were fairly constant. In view of the fact that the sewage was not constant either in composition or in flow it was decided to work with an apparatus in which each factor would be under control.

The investigation now fell naturally into two parts: -the activation of sewage of known composition with varying amounts of air and the activation of a mixture of sewage and the sludge in a similar manner. Assuming that the air used in aerating the sewage furnished all the oxygen whereby the nitrogenous and carbonaceous matter is oxidized, it is quite probable that the rate of oxidation is dependent on the volume of air admitted and the amount of oxidizable matter present. It is, also, evident that a state of equilibrium will be reached for the products of the reaction.

As a preliminary experiment it was decided to see if by using a small amount of air, one could arrive at a state of equilibrium and detect it by estimating the nitrates and nitrites together with the CO_2. From the data in Table 2 it is quite plainly observed that equilibrium in the carbonaceous oxidation was reached in three days. The nitrate was very slow in forming, thus giving an indication that carbonaceous oxidation is accomplished more easily than nitrogenous.

The next investigation was conducted on a fresh sample of sewage direct from the sewer, aerating with a larger volume of air. A more complete analysis was made, and from the data in Table 3 it is evident that a state of equilibrium in the nitrate was arrived at in three days. There is also an indication here of a more rapid oxidation in the carbonaceous matter.

It remained to discover the minimum time in which one could reach the equilibrium stage and accordingly a fresh sample of sewage was aerated with a large volume of air. Data in Table 4 furnishes evidence of this stage being reached in forty-eight hours.

Before aerating a sample of sewage which was inoculated with sludge, it was considered expedient to ascertain the effect of the presence of sludge on a sample which had been brought to a state of equilibrium by aeration. A new sample of fresh sewage was aerated similarly to the previous one, and in forty-eight hours the equilibrium state was almost reached. (Data Table 5A.) Aeration was continued for six days, and then the tank was inoculated with 14% washed activated sludge. The data in Table 5B leads one to deduce that the effect of adding sludge is almost nil, and therefore the sludge itself was in a state of equilibrium in respect to oxidation by the air when it was introduced.

If this be the case then, the presence of sludge in a sample of sewage should not increase the rate of oxidation. A sample of fresh sewage was inoculated with 17% washed sludge and was aerated similarly as the previous samples were. Data in Table 6 indicates that the presence of this sludge did not hasten the oxidation, for this sample behaved in no wise differently than a sample of sewage alone.

The accompanying graph will help the reader to see more quickly that the presence of sludge did not hasten the formation of nitrates. The amount of solids present in the raw sewage no doubt has some effect, and possibly accounts for the more rapid rate in the case of Table 4.

The reader's attention will no doubt be drawn to the peculiar fluctuation in CO_2. This was due to the varying amounts of CO_2 in the air at the plant. In Table 6 the net CO_2 shows a steady decrease till a fairly constant state is reached.

TABLE NO. I.

<table>
<tr><th rowspan="2">Month</th><th rowspan="2">Date</th><th rowspan="2">Time</th><th colspan="3">% Gas from Activating Tank</th><th colspan="3">From Re-activating Tank</th><th colspan="3">% Gas in Air</th><th rowspan="2">Remarks</th></tr>
<tr><th>CO_2</th><th>O_2</th><th>N_2</th><th>CO_2</th><th>O_2</th><th>N_2</th><th>CO_2</th><th>O_2</th><th>N_2</th></tr>
<tr><td>May</td><td>30</td><td>Noon
12.00</td><td>.97</td><td>19.83</td><td>79.20</td><td>1.49</td><td>18.81</td><td>79.70</td><td>........</td><td>........</td><td>........</td><td></td></tr>
<tr><td>June</td><td>1</td><td>a.m.
10.30</td><td>.61</td><td>20.29</td><td>79.10</td><td>1.24</td><td>19.66</td><td>79.10</td><td>........</td><td>........</td><td>........</td><td>Sewage off during night, turned on at 9.00 a.m.</td></tr>
<tr><td>June</td><td>1</td><td>p.m.
4.00</td><td>.83</td><td>20.07</td><td>79.10</td><td>1.19</td><td>19.21</td><td>79.60</td><td>........</td><td>........</td><td>........</td><td></td></tr>
<tr><td>June</td><td>2</td><td>Noon
12.00</td><td>.50</td><td>20.40</td><td>79.10</td><td>1.14</td><td>19.06</td><td>79.80</td><td>........</td><td>........</td><td>........</td><td>Sewage off during night, turned on at 9.20 a.m.</td></tr>
<tr><td colspan="13">Up till this time, sample of gas in both reactivating and activating tanks were taken from third baffle. The collecting apparatus was then shifted to the settling tank, while the apparatus in the reactivating tank was left at the third baffle.</td></tr>
<tr><td>June</td><td>7</td><td>p.m.
1.45</td><td>1.75</td><td>18.35</td><td>79.90</td><td>1.16</td><td>18.94</td><td>79.90</td><td>........</td><td>........</td><td>........</td><td>Sewage off for three days.</td></tr>
<tr><td>June</td><td>8</td><td>a.m.
10.00</td><td>1.47</td><td>18.53</td><td>80.00</td><td>.65</td><td>19.55</td><td>79.80</td><td>........</td><td>........</td><td>........</td><td>Sewage off during night.</td></tr>
<tr><td>June</td><td>8</td><td>p.m.
3.00</td><td>2.04</td><td>17.36</td><td>79.60</td><td>1.06</td><td>19.04</td><td>79.90</td><td>........</td><td>........</td><td>........</td><td>Sewage turned on 9.20 a.m.</td></tr>
<tr><td>June</td><td>9</td><td>a.m.
10.30</td><td>2.27</td><td>17.93</td><td>79.80</td><td>1.29</td><td>18.61</td><td>80.10</td><td>........</td><td>........</td><td>........</td><td>Sewage turned off during night.</td></tr>
<tr><td>June</td><td>9</td><td>Noon
12.00</td><td>........</td><td>........</td><td>........</td><td>........</td><td>........</td><td>........</td><td>.27</td><td>20.42</td><td>79.30</td><td>......</td></tr>
<tr><td>June</td><td>9</td><td>p.m.
4.00</td><td>1.70</td><td>18.60</td><td>79.70</td><td>1.19</td><td>18.81</td><td>80.00</td><td>........</td><td>........</td><td>........</td><td></td></tr>
</table>

TABLE 2.

Day	Month	Date	Time	a.m. p.m.	Temp. Tank	D. O.	% Gases			Nitrate	Nitrite
							CO_2	O_2	N_2		
Thursday	June	23	9.30	a.m.	16.0	2.8	....	....	....	0	0.25
Thursday	June	23	2.00	p.m.	22.0	1.9	0.81	19.79	79.4	0	0
Thursday	June	23	4.45	p.m.	23.0	0.5	1.23	19.47	79.3	0	0
Friday	June	24	9.15	a.m.	23.0	0.3	1.39	18.91	79.7	0	0
Friday	June	24	4.45	p.m.	24.0	0.9	1.62	18.82	79.8	0	0
Saturday	June	25	9.15	a.m.	22.5	3.8	1.19	19.31	79.5	0	0.1
Sunday	June	26	10.45	a.m.	23.0	3.7	1.43	18.87	79.7	0	0
Monday	June	27	9.10	a.m.	24.0	4.0	0.83	19.67	79.5	0	0.2
Monday	June	27	4.20	p.m.	25.0	4.1	1.04	19.36	79.6	0	0.1
Tuesday	June	28	9.10	a.m.	24.0	4.2	0.85	19.75	79.4	0	2.8
Tuesday	June	28	4.45	p.m.	24.0	4.4	0.95	19.75	79.3	0	1.0
Wednesday	June	29	9.10	a.m.	24.0	4.6	0.67	19.93	79.4	0	0.6
Wednesday	June	29	4.45	p.m.	24.5	4.7	0.90	19.80	79.3	Trace	Trace
Thursday	June	30	9.20	a.m.	24.0	4.6	0.76	20.04	79.2	1.0	0
Thursday	June	30	4.45	p.m.	24.5	4.7	....	....	79.2	1.50	0
Friday	July	1	12.45	Noon	25.5	4.6	1.07	19.69	79.3	3.00	....

TABLE 3

Day	Month	Date	Time	a.m. p.m.	Temp. Tank	D.O.	% GAS			Nitrate	Nitrite	Free NH3	Alb. NH3	% Solids in Half Hour standing	
							CO2	O2	N2					Sample	Color Sewage
Wednesday..	July	6	10.00	a.m.	19.0	3.9	0.42	20.48	79.1	0	Trace	11.0	8.2	0.5	Grey
Wednesday..	July	6	4.00	p.m.	24.5	4.6	0.91	19.89	79.2	Trace	0.15	2.8	6.8	1.4	Yellow Brown
Thursday....	July	7	9.10	a.m.	25.0	5.5	0.37	20.43	79.2	0.45	0.3	4.4	8.0	2.0	Golden Brown
Thursday....	July	7	3.30	p.m.	26.5	5.2	0.65	20.15	79.2	1.25	Trace	7.0	6.0	2.4	Dark Brown
Friday......	July	8	9.10	a.m.	25.5	5.5	0.26	20.24	79.5	1.75	0	1.2	5.6	2.5	Dark Brown
Friday......	July	8	3.30	p.m.	25.5	5.5	0.53	20.07	79.4	45	0	0.6	6.0	2.5	Dark Brown
Saturday...	July	9	9.05	a.m.	23.5	5.8	0.20	20.70	79.1	2.5	5.0	0.5	4.2	2.5	Dark Brown
Saturday....	July	9	3.30	p.m.	24.5	5.8	0.45	20.35	79.2	5.0	1.0	......	......	2.5	Dark Brown
Sunday.....	July	10	9.25	a.m.	......	......	0.29	20.51	79.2	5.0	0.1	......	......	2.5	

Effluent clear and sparkling.

TABLE 4

Day	Month	Date	Time	a.m. p.m.	Temp. Tank	Miller D.O.	% Gas			Nitrate	Nitrite	Free NH_3	Alb. NH_3	P.P.M. Tot. 1cc. of Gas			Dissolved per litre N_2	Solids Settling in Half Hour	
							CO_2	O_2	N_2					N_2	CO_2	O_2		Hr.	Color
Mon....	July	11	10.00	a.m.	19.0	5.4	0.21	20.59	79.2	.2	0	11.2	13.0	72	8.3	4.5	15.7	½%	Grey
Mon....	July	11	3.30	p.m.	23.0	5.5	0.54	20.36	79.1	0.2	0.2	11.5	11.5	69	15.4	4.6	18.0	2%	L. Brown
Tues...	July	12	9.10	a.m.	24.5	9.6	0.38	20.32	79.3	5	1.5	3.0	11.5	56	4.0	3.0	14.4	2.5%	L. Brown
Tues...	July	12	3.30	p.m.	26.0	5.4	0.48	20.42	79.1	8	0.1	3.0	13.5	51	4.0	4.5	13.7	3%	L. Brown
Wed....	July	13	9.10	a.m.	25.0	5.5	0.32	20.38	79.3	15	1.0	6.5	3.5	51	4.4	5.5	13.9	3.5%	L. Brown
Wed...	July	13	3.30	p.m.	26.5	5.5	0.25	20.65	79.1	16	2.5	2.3	11.8	51	0.5	5.3	13.6	3.5%	D. Brown
Thurs...	July	14	9.10	a.m.	26.0	5.7	0.23	20.37	79.4	14	0.5	3.1	6.7	51	22	6.0	14.2	3.5%	D. Prown
Thurs...	July	14	3.30	p.m.	26.5	5.7	0.12	20.78	79.1	15	1.8	4.0	6.4	52	2.7	6.0	14.2	3.5%	D. Brown
Fri......	July	15	9.10	a.m.	25.0	5.8	0.12	20.58	79.3	15	0.12	2.2	7.2	80	3.1	6.1	14.0	4%	D. Brown
Fri......	July	15	3.30	p.m.	25.0	5.8	0.18	20.72	79.1	16	0.2	1.6	6.3	51	4.3	6.1	14.4	4%	D. Brown
Sat.....	July	16	9.10	a.m.	23.5	6.0	Lost	....	79.4	15	.05	1.6	12.0	51	1.8	6.1	14.1	4%	D. Brown
Mon....	July	18	9.10	a.m.	24.0	6.0	0.36	20.04	79.6	15	Trace	6.5	18.0	50	1.7	6.1	13.8	4%	D. Brown
Mon....	July	18	3.30	p.m.	....	.....	.....	.....	.....	....	Trace	1.5	8.0	50	....	....	..		

TABLE 5A

Day	Month	Date	Time	a.m. p.m.	Tank Temp.	Miller D.O.	Agitating Gas			P.P.M.		Free NH_3	Alb. NH_3	Total Nitrogen in sample	Total Nitrogen in effluent	Total Solids in 100cc sample	Total Solids in 100cc effluent	Dissolved Gas per Litre			Amt Solids ½ Hr.	Color of Solids
							CO_2	O_2	N_2	Nitrate	Nitrite							CO_2	O_2	N_2		
Wednesday.	July	20	3.15	p.m.	18.5	6.0	0.33	20.47	79.2	1.2	0.75	7.0	8.0	76	65	0.112	0.060	14.6	4.8	15.8	1%	Grey
Wednesday.	July	20	3.30	p.m.	22.0	5.9	0.31	20.69	79.0	1.2	0.8	7.0	6.0	57	43	......	......	16.4	5.3	15.3	1%	Grey
Thursday...	July	21	9.10	a.m.	22.0	5.7	0.33	20.07	79.6	3.0	1.0	7.0	6.0	40	37	0.077	0.057	13.7	5.1	14.8	1%	Slightlybrown
Thursday...	July	21	3.30	p.m.	23.5	6.2	0.29	20.51	79.2	4.4	0.5	7.5	7.0	38	35	......	......	6.5	6.0	14.5	1.2%	Yellow brown
Friday.....	July	22	9.10	a.m.	23.0	6.1	0.36	20.04	79.6	10	Trace	3.5	5.0	34	29	0.071	0.048	4.8	6.4	14.6	1.2%	Yellow brown
Friday.....	July	22	3.30	p.m.	24.0	6.1	0.36	20.64	79.0	10	0.4	3.5	6.0	31	21	......	......	3.9	6.3	14.3	1.2%	Yellow brown
Saturday...	July	23	9.10	a.m.	23.0	6.3	0.15	20.35	79.5	12	1.0	1.5	4.5	28	22	0.076	0.057	3.6	6.5	14.3	1.3%	Yellow brown
Monday....	July	25	9.10	a.m.	24.0	6.3	0.20	20.59	79.2	10	0.2	1.0	4.5	28	23	0.062	0.062	1.6	6.3	14.1	1.4%	Yellow brown
Monday....	July	25	3.30	p.m.	25.5	6.4	0.24	20.56	79.2	13	0.2	2.0	4.5	......	......	......	......	3.1	6.9	15.6	1.5%	Yellow brown
Tuesday....	July	26	9.10	a.m.	24.5	6.4	0.23	20.33	79.4	12	0.2	2.0	4.5	27	23	......	......	7.5	6.3	13.9	1.5%	Yellow brown

TABLE 5B

INOCULATED WITH 14% SLUDGE

Day	Month	Date	Time	a.m. p.m.	Tank Temp.	Miller D.O.	Agitating Gas			P.P.M.		Free NH_3	Alb. NH_3	Total Nitrogen in sample	Total Nitrogen in Effluent	Total Solids in 100cc sample	Total Solids in 100cc Effluent	Dissolved Gas per Litre			Amt. Solids in ½ hr	Color Solids
							CO_2	O_2	N_2	Nitrate	Nitrite							CO_2	O_2	N_2		
Tuesday....	July	26	2.00	p.m.	25.5	6.4	.....	......	79.2	12	0.5	3.0	60	153.5	22	0.249	.050	0.6	5.6	3.8	15%	Greyish black
Tuesday....	July	26	3.30	p.m.	26	6.4	0.41	20.09	79.5	15	0.9	7.5	79	140	31	......	......	2.5	6.0	13.5	15%	Greyish black
Wednesday.	July	27	9.10	a.m.	26	6.3	0.34	20.26	79.4	16	1.7	2.4	66	128	29	0.233	.053	Bro	ke		14%	Tinge of brown
Wednesday.	July	27	3.30	p.m.	26.5	6.3	0.48	20.12	79.4	16	1.75	5.8	91	143	31	......	......	Ap	para	tus	14%	Tinge of brown
Thursday...	July	28	9.15	a.m.	25.5	6.3	0.38	20.42	79.8	17	0.75	2.4	80	134	27	0.233	.058	2.6	6.1	13.8	14%	Little browner
Thursday...	July	28	3.30	p.m.	26	6.2	0.42	20.18	79.4	16	0.60	2.6	66	127	31	......	......	1.8	6.0	14.0	14%	Brownish
Friday.....	July	29	9.10	a.m.	24.5	6.1	.....	......	79.5	17	0.35	1.4	59.5	126	31	......	......	2.3	6.2	14.2	14%	Dark brown
Friday.....	July	29	3.30	p.m.	25	6.1	0.34	20.46	79.2	18	0.15	2.0	58.4	......	......	......	......	0.2	6.1	14.1	14%	Dark brown

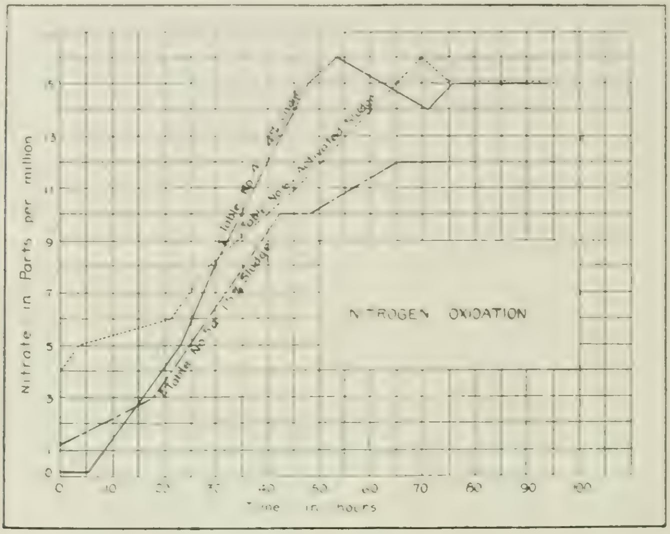
Total Nitrogen in Sample 5. 6. Total Nitrogen in Effluent 5. 1.

TABLE 6

Day	Month	Date	Time	a.m. p.m.	Temp. Tank C.	Miller D.O.	Percentage of Gas in Ag.			Percentage in Air			Net CO_2	Nitrate	Nitrite	Free NH_3	Alb NH_3	Total Nitrogen in Sample	Total Nitrogen in Effluent	Total Solids in Sample	Solids in Effluent	C.C. per Litre Dissolved Gases			Amt. of Flock in ½ hour	Color of Flock
							CO_2	O_2	N_2	CO_2	O_2	N_2										CO_2	O_2	N_2		
Thur....	Aug	4	11.50	a.m.	20	2.2	.90	19.70	79.4	.20	20.70	79.1	.70	4	.02	6.0	38.0	186	66	....	....	Brok App	e arat	us	17%	Grey black
Thur....	Aug.	4	3.30	p.m.	21	5.2	.63	20.17	79.2	.18	20.92	78.9	.45	5	0.25	4.5	40.0	221	25	.401	.050	3.2	4.4	16.8	16%	Grey black
Fri.....	Aug.	5	9.30	a.m.	21	5.3	.49	5.21	79.3	.20	20.60	79.2	.29	6	0.05	5.0	57.0	186	18	.349	.045	4.0	5.0	15.4	16%	Grey black
Fri.....	Aug.	5	3.20	p.m.	24	5.5	.49	20.11	79.4	.23	20.67	79.1	.26	8	0.12	8.0	84.0	204	....	.225	....	2.9	5.5	15.2	17%	Grey black
Sat.....	Aug.	6	9.30	a.m.	23	5.4	.40	20.30	79.3	.13	20.33	79.4	.27	11	0.2	3.7	58.0	194	20	....	.050	1.2	5.4	14.6	17%	Slightly brown
Mon....	Aug.	8	9.30	a.m.	21	5.6	.28	20.42	79.3	.14	20.56	79.3	.14	16	Trace	2.2	65.0	169	25	.332	.056	3.7	6.0	14.6	......	
Mon....	Aug.	8	3.30	p.m.	23	5.7	.18	20.72	79.1	.14	20.76	79.1	.04	15	Trace	4.2	34.0	188	16	....	....	3.7	6.0	14.3	17%	Slightly brown
Tues....	Aug.	9	9.30	a.m.	21	5.8	.23	20.67	79.1	.12	20.69	79.2	.11	15	.05	3.7	38.5	169	15	.348	.058	2.5	6.0	14.4	16%	Slightly brown
Tues....	Aug.	9	3.30	p.m.	23.5	5.9	.24	20.76	79.0	.17	20.73	79.1	.07	15	0.2	5.5	45.0	......	19	....	....	0.2	6.0	13.6	16%	Becomi'g browner
Wed....	Aug.	10	9.30	a.m.	21	5.8	.24	20.56	79.2	.18	20.62	79.2	.06	15	.75	5.4	46.0	176	18	.360	.065	0.1	5.8	13.6	16%	Darker brown
Wed....	Aug.	10	3.30	p.m.	23	5.8	.26	20.64	79.1	.14	20.76	79.1	.12	16	Trace	4.8	55.0	190	16	....	....	3.5	5.9	13.8	17%	Darker brown
Thurs...	Aug.	11	9.20	a.m.	21	5.7	.26	20.56	79.2	.19	20.71	79.1	.07	15	Trace	3.7	56.0	157	19	....	....	3.6	6.1	14.1	17%	Darker brown
Thurs...	Aug.	11	3.30	p.m.	22	5.8	....	.....	....	....	.....	....	....	15	Trace	6.5	67.0	......	....	....	....	1.4	6.2	14.0	17%	Darker brown

Total Nitrogen in the sample is 5.6%. Total Nitrogen in the Effluent is 4%.

From the experimental data submitted, it may be said in conclusion that the carbonaceous matter is apparently oxidized more easily than the nitrogenous. The variation of percentage of CO_2 and O_2 in the air before passing into the sewage and after is relatively small, and becomes smaller as the volume of air is increased.



The nitrogen undergoes but little change. More important, however, is the fact that the presence of activated sludge, while it may aid in clarification, does not accelerate oxidation of raw sewage. Finally it is interesting to note that the estimation of dissolved oxygen by Miller's method checks closely with the result obtained when the gas was boiled out, and estimated in a Hempel Gas Burette.

My thanks are due Mr. A.V. Delaporte, chemist in charge of the Experimental Station, and Mr. F. A. Dallyn, head of the Sanitary Engineering Division, Toronto, who supervised this research.

STUDIES IN FLY CONTROL.

By A. E. Berry, M.A.Sc., and C. H. McLeod, B.A.

With a view to studying the effects of measures applied to an entire municipality in the control of house-flies, and other species, which normally frequent dwelling houses and barns, a series of experiments were conducted at Iroquois Falls during the months of June, July and August, 1921. It was not intended primarily to educate the residents as to the manner in which flies spread disease and to recognize their unsanitary habits, but more to take conditions as they were found and determine the most effective means of preventing this annual fly nuisance and with the hope of demonstrating the possibility of banishing the fly from a community. Most work undertaken by individuals as a means of keeping down the flies has been aimed at the destruction of the adults. While this undoubtedly has some beneficial effects, these flies have probably laid their eggs and thus given rise to a great many ready to take the place of the one killed. In these experiments it was aimed to prevent the development of the fly to the adult stage by destroying the larvæ in the breeding grounds. The advantage of this method lies in the fact that the larvæ do not move about as do the adults, and it is, therefore, more effective to apply control measures at this stage than on the adult fly.

In many of the northern towns of Ontario, especially where lumbering or paper-making is in progress, large numbers of horses are required. The manure from these stables does not as a rule receive much attention, and thereby creates a very favourable breeding-ground for house-flies. During the summer months, with a shortage of labour, there is little time available for removal of the manure, and as farming is not very extensive in these areas, there is little or no demand for fertilizers. This condition, together with the very hot summer climate, makes the control of the flies a problem to be reckoned with.

Iroquois Falls is a northern town of recent growth, in which great pride is taken in maintaining surroundings somewhat superior and more beautiful than that found in the average northern municipality. It owes its development to the paper-making industry, and the residents find employment in one of the largest paper mills in the country. The company management was progressive, and ready to adopt any methods designed to further the interests of the town. For these reasons it was considered a most favourable location for demonstrating means whereby flies might be eliminated.

Sanitary Survey.

Prior to the application of any control measures it was essential that an exact knowledge be had of all places which might serve either as breeding grounds or food supply to the adult fly. With this in view, a sanitary survey was made of the entire townsite and all adjoining property. This included a visit to every house and building. All unsanitary conditions were noted and periodic inspections made at later dates to ascertain if flies were breeding there or feeding on the refuse. This method not only indicated the points where treatment was required, but it showed conclusively the type of breeding grounds and food most sought for by the different species of flies.

The survey revealed some conditions very commendable to the town, in that sewerage facilities, water supply and garbage collection were available to practically every residence. Householders were provided with covered garbage cans, and collections were made from these about twice a week, while the garbage from the hotel, cookhouse, and stores was removed on an average of twice per day, and destroyed by incineration. Such conditions cannot fail to have a distinct bearing on the control of the fly nuisance, and an improvement in the general health of the community. Despite the use of these sanitary conveniences it was evident, from the large majority of houses screened, that the town was accustomed to having large numbers of flies each summer. The citizens' evident desire to stamp out the flies was manifested in the attempts made to keep them from their houses. The number of flies which can, however, be destroyed by measures confined to the individual house is small in comparison to the numbers which daily hatch in unsupervised breeding grounds.

In spite of the excellent sanitary conditions prevailing at large, there were some conditions, partly temporary, which bore an important relation to the fly nuisance. The big demand for houses occasioned by the increasing number of workmen required for the production of newsprint during the later years of the war, necessitated the construction of temporary frame houses unprovided with modern sanitary conveniences. Several such houses have in addition been constructed just outside the corporation boundary. These dwellings all have outside privies entirely open to flies, which not only breed there, but migrate to food and homes located in other parts of the town. The direct supervision of such buildings did not in the main rest with the municipal authorities. Several were found on the railway property near buildings occupied by train crews and other employees, while several others were outside the boundaries of the town and were in a position to augment the fly nuisance. All temporary houses within the town are to be removed as soon as sufficient permanent dwellings can be erected. When this has been carried out the town will be in an extremely favourable position in regard to general house sanitation.

The company horse stables were frame structures with canvas covering and it was quite impossible to darken them sufficiently to keep out flies. The large numbers of horses required in the paper-making industry and for work in the townsite presented a serious problem in fly control work. Flies normally became so numerous and troublesome that it was impossible for the horses to get proper rest. All the manure was dumped in piles outside the doors and made excellent breeding grounds for flies. In addition to the horse stables, there was the dairy supplying milk to the town; and the manure from here was drawn away at certain periods, but during most of the hot weather it was left in the yard outside the stable. The horses were kept in the stable at feeding hours and at night, while the cows were in at milking periods only.

The breeding grounds at Iroquois Falls of the various flies may be summed up under the following heads:—

(a) Outdoor privies, totalling 32 in number.

(b) The dairy, with 6 horses and 35 cows.

(c) Horse stables, with an average of 35 to 40 horses.

The flies were not only attracted to the privies and the stables, but there were places throughout the town where they gathered for food. These were mainly the garbage boxes outside the hotel, cookhouse, and butcher shop. The bins supplied for these places were not large enough or provided with tight covers and it was therefore impossible to have them fly-proof. While eggs were laid, and larvæ hatched in these boxes, the garbage was burned before the adult fly could appear.

TYPES OF FLIES FOUND.

The species and prevalence of flies found at Iroquois Falls resulted from the types of breeding grounds available. The common house-flies (*musca domestica*) were most numerous. They were widely scattered throughout the town, and in the houses. It was evident that they were breeding almost entirely in the manure piles at the stables. Some were found around the privies, but appeared to be there more for food than to lay their eggs. Eggs and larvæ were found in the garbage boxes, but they were not permitted to reach the adult stage.

The blow-flies, including the blue-bottles and green-bottles, were very numerous, and the residents stated they were more troublesome than the others. This was probably due, not to an excess of numbers over the house-flies, for they take longer to develop, but to their greater size and the rapidity with which they destroy meat left exposed. It would appear that they lay eggs on meat almost as soon as they feed, and larvæ hatched from these, rapidly spoil it. This was no doubt the case in the butcher shop, where meat was frequently returned by the customers, and in addition the butchers were forced to throw away large amounts. This was also in spite of the fact that the meat shop was entirely screened and with sliding doors opened only to pass parcels to purchasers. These blow-flies became very troublesome in the houses in the fall, where they went in search of warmth. In the summer they were scattered over the municipality feeding upon refuse from the houses, and especially attracted to the garbage boxes, whenever meat was present.

The blow-flies naturally prefer meat for food, and on which to lay their eggs, but in this locality the eggs laid on meat did not have an opportunity to develop. It has been stated by entomologists that they would breed to a certain extent in the contents of privies. An examination of these indicated that enormous numbers were being developed here to spread over the entire town. In some privies the contents appeared as a moving mass of larvæ. The blow-flies did not frequent the stables, and it seemed improbable that they were breeding to any extent in places other than the privies.

In addition to the house-flies and blow-flies, a number of other types in smaller numbers were found especially around the dairy where suitable breeding grounds were available. The biting house flies were numerous around the cattle. They followed the cows to pasture during the day, and on entering the stable at milking hours found suitable material in which to deposit their eggs. They were very troublesome to the cows and it was found necessary to use fly-ease solutions for temporary relief.

Other types of flies found included the small house-fly (*fannia canicularis*), the bots, stable flies, dung flies, etc., but these were not so numerous as the other species.

To appreciate the nature of fly control work, it is necessary to first of all understand the life history and characteristics of the flies to be dealt with. They have different breeding preferences, different life cycles, require different foods, and have varying means of transferring disease organisms.

DESCRIPTION AND HISTORY OF TYPES FOUND.

The House or Typhoid Fly.

This is the type most commonly found around houses, almost wherever habitation exists. It appears with the advent of warm weather and remains active until the approach of cold weather in the fall. Several other species are often mistaken for this, but on careful examination it can usually be identified by the decided elbow appearance of the third vein in the wing. It is a medium sized fly, measuring about a quarter of an inch in length, and is a dark grey colour.

The sense of smell seems to be highly developed in the fly, for it is attracted from long distances to food or refuse possessing an odour. It feeds on decaying refuse such as garbage, manure, excreta, and any food or wastes found around dwellings. The method of taking in this food is interesting in that the head is equipped with sucking mouthparts which cannot pierce the skin or bite, as is often supposed. Liquid food is readily taken up by the fly, but when dry materials are encountered an additional procedure is necessary. In this case the fly regurgitates a great deal of saliva or liquid food which breaks up the solid particles into a form which will readily pass through the mouthparts. This method is responsible for the presence of a large portion of the specks found on windows and exposed surfaces.

The development of the fly takes place in three stages: The egg, the larva and the pupa. The female fly lays her eggs in the most suitable material available. This may include garbage, privies, or animal excreta, while horse manure is preferred, but only when fresh and moist. The eggs are deposited in groups just under the surface of the manure. The average number laid at one time ranges from 120 to 150 and a fly may lay as many as three or more of these clusters during her lifetime. These eggs are easily seen with the naked eye. This stage will last during hot weather, from eight to twelve hours, and the larva will then appear as a small white maggot. The larva stage requires about four or five days for development in warm weather. During this period the larvæ are very active and crawl rapidly through the manure when disturbed. The majority feed within the top six inches, but are quite sensitive to direct light or exposure to the air. Where each day's manure is placed on top of the preceding supply the larvæ tend to work down to the lower margin and break up the manure into fine particles. All feeding and growth takes place in the maggot stage, the end of which may be recognized by the appearance of a yellow color due to the presence of fat cells. Before pupation, the larvæ tend to migrate to a dry part of the breeding grounds. If the manure is placed on the ground they will usually crawl into the top layer of the soil or seek the bottom edge of the pile.

At the end of the maggot stage a reddish brown case forms on the larva and it is then known as a pupa. This period may last four or five days in summer, and is entirely a resting stage. No food is taken and it therefore cannot be poisoned. At the termination of the pupal stage the end of this case is broken off and a full grown, adult fly emerges. Its wings are damp and must be dried before flight can be made. The young fly is hungry after such a long resting period, and goes at once in search of food.

It was originally estimated that the fly did not reach maturity until about two weeks after leaving the pupa, but recent experiments seem to indicate that in midsummer the female is ready to deposit eggs at the end of three or four days after reaching the adult stage. This accounts for the rapid increase in numbers during the summer.

Blow-Flies.

The majority of blow-flies are larger than the house-fly and have bright, metallic, blue-black or green bodies. They are also equipped with sucking mouthparts, and prefer fresh meat as food. They are very prevalent in some localities around privies and garbage boxes.

The eggs of the blow-flies are not laid in horse manure, but on fresh, decaying or cooked meats, dead animals, human excrement or garbage. They are deposited in masses of as many as 300, and these develop into larvæ in from ten to twenty-four hours. The life cycle is somewhat similar to that of the house-fly, but the period of development is longer and requires about three weeks in summer.

The Biting House-Fly (*stomoxys calcitrans*).

This fly greatly resembles the common house-fly and it is difficult without a close observation to differentiate between the two, but their habits are entirely different. The biting fly is not commonly found around the houses, but prefers the stables where it can attack the cattle and horses. It differs from the typhoid fly in that it has biting mouthparts which are used to suck blood from animals. It breeds in manure, human excrement, and moist straw. The eggs are laid in an irregular heap of about sixty. The development from egg to adult is slower than the house-fly, and requires from twenty-five days to a considerably longer period.

This fly appears to grow more active just before a rainstorm and attacks animals with great vigour. Its close resemblance to house-flies has often given rise to the belief that the latter bite at certain times.

THE TRANSFERENCE OF DISEASE BY FLIES.

Flies are a common agency in the spread of infectious diseases. They have two methods of transferring the germs from the excreta and waste of sick persons to the food of others: first, by carrying the germs on the exterior of the body. The bodies of all these flies are provided with short hairs or bristles. In feeding, or walking over infectious material the germs are collected on these hairs, and thus carried to whatever food the fly may find exposed. Second, by conveying the germs in their digestive tract. This latter means of carrying disease germs is by way of the alimentary canal of the fly. These germs may be sucked up by the fly and carried to other points where later they may be regurgitated with the saliva required to dissolve other food. Many in this way are left behind and taken into the stomach of persons eating such food. It has, moreover, been found that many germs may pass through the alimentary canal of the fly and still retain their virulence when deposited as specks. It is possible that protozoa may be introduced into the blood by means of the biting house flies.

HOW FLIES PASS THE WINTER.

The prevailing belief that flies pass the winter months by remaining in a dormant condition behind pictures and in crevices of the walls appears to be erroneous in the light of recent experiments. The life of the adult fly is normally short, and there is no reliable evidence to prove that it will live all winter. It is now considered that the supply is kept from extinction during the cold weather, either by the larvæ and pupa existing in manure, or the continued breeding of the adult in quarters unaffected by unfavourable weather. The presence of larvæ and pupa in the manure piles during the winter and their emergence as adult flies in early spring, appears to be the most reasonable explanation as to their means of escaping the winter.

EXPERIMENTS CONDUCTED.

The control measures attempted at Iroquois Falls may be divided into two classes as follows:—

(a) Experiments on the blow-flies.

(b) Experiments on the house and stable-flies.

It was during the latter part of June, when work was started and flies of all types were prevalent in fairly large numbers. The blow-flies appeared to be slightly more common than the others, due probably to their hardier nature or to the fact that the house-flies had not left the stables to any great extent at that time.

It was essential that some method be used for estimating the effect of control measures on the number of flies at different points from time to time. An accurate estimate of this is difficult to procure, but a method quite useful for comparative purposes was adopted and consisted in setting fly-traps at definite points for fixed periods. The flies caught in each trap were counted after they had been killed by five minutes' exposure to the fumes of burning sulphur in an inverted barrel. Under similar conditions the numbers caught gave a very fair means of comparing the prevalence of the flies at different periods. Of course adverse weather conditions decreased the counts materially, but the weather was mostly uniform and slight variations did not greatly affect the comparison. It was not intended that the traps should serve as a means of extermination, but of course they had a limited effect. It is evident from the results, however, that trapping alone is not sufficient. While the traps were in use and before successful measures were found to destroy the larvæ, the flies in the town became more numerous.

In considering the results from the various methods applied, it must be borne in mind that the weather plays an important part in the numbers found in a district. The summer of 1921 was exceedingly hot at Iroquois Falls, and this served to materially hasten the development in the different stages over that required under average weather conditions. The eggs were hatched and developed into adult flies in the shortest possible time and very little weather sufficiently adverse to produce inactivity of the fly was experienced. Under such conditions it is apparent that had no methods been applied for the control of the fly, the numbers would have greatly surpassed those of other years.

The various methods tried out as a means of destroying the larvæ are as follows:—

THE BLOW-FLIES.

Fortunately the first methods adopted for the destruction of these larvæ were a success. It seemed certain from the sanitary survey that the privies were responsible for the presence of the blow-flies, and the treatment was consequently directed against these. A light coat of chloride of lime was sprinkled every four or five days on the contents of the privies. The amount of bleach required was small, in that subsequent applications required the powder to be applied only on the fresh and exposed feces. No eggs were laid on material to which the bleach had once been applied. An examination of the privy contents on the day following the treatment showed that all the larvæ had been killed. Continued treatment by this method soon reduced the counts found in the traps, and practically eliminated the blow-fly from the town. The disappearance of this fly was the subject of considerable comment by the citizens, who were naturally accustomed to having them increase in numbers as the summer progressed. It was especially noticeable around the cookhouse and butcher shop. The butcher stated he had no trouble whatever in keeping the meat nor did he have any returned after these measures had been in operation for a short while.

Following are given tables showing the number of blow-flies caught at different points in the town. While the reduction in numbers is not entirely uniform, this may be accounted for by the variation in weather conditions and to the fact that before the traps were set large numbers of these flies were scattered throughout the town and it required some time before these could be attracted to those places where the traps were set.

TABLE NO. 1.

Trap set at the cookhouse garbage box for six hours each day, and baited with fresh meat and molasses.

BLOW-FLIES.

Date	Number Caught in Trap	Weather	Remarks
June 25	2600	Fair and warm	
" 27	6600	Very warm	
" 28	5500	" "	
" 29	1300	" "	
" 30	1550	" "	
July 5	1250	Very hot	
" 6	800	Smoky	Smoke kept the flies away.
" 7	2060	Hot	
" 8	2570	Warm	Chloride of lime treatment in privies started.
" 9	1900	Very hot	
" 11	800	Hot	
" 12	1000	Hot and cloudy	
" 13	815	Rain	
" 14	1625	Fine	
" 15	1350	Fine	
" 16	3050	Cloudy, with rain	
" 18	2000	Changeable	
" 19		Heavy rain	
" 20	742	Fine	Heavy rain July 19th.
" 21	95	Warm	
" 22	962	Hot wind blowing from village of Jacinto	The green-bottle appeared here where the blue-bottle had been most prevalent before. Believed to be coming from Jacinto, about half a mile away. The effect of treatment should begin to show results at this point.

Date	No. caught in trap	Weather	Remarks
July 23 to 27		Rainy weather	Flies driven away.
July 24	140	Clear and warm	
" 29	755	" " "	
" 30	644	Clear	
Aug 4	200	Clear and warm	First part of August cool.
" 5	178	" " "	
" 6	200	Cool	
" 9	221	Warm	
" 11	100	Clear and warm	
" 12	75	" " "	
" 13	60	Warm	
" 15	40	Clear and warm	
" 16	85	Warm	
" 17	20	"	
" 18	75	"	
" 19	30	Some rain	
" 20	50	" "	
" 22	25	Warm	

The garbage box of the cookhouse was one of the chief feeding centres for the blow-flies. They were attracted in large numbers by the meat in the box. The counts at the end of August were so small that they were scarcely noticeable at all. Blow-flies are very easily trapped and thereby indicate quite well the numbers present.

TABLE NO. 2.

Trap outside the butcher shop. Set for 48-hour periods and baited with meat and molasses.

BLOW-FLIES.

Date	Number	Weather	Remarks
June 30	4000	Very warm	
July 2	5050	Very hot	
" 5	6600	Hot	
" 7	6300	Hot	
" 9	4650	Hot	Chlorination treatment begun July 8th.
" 12	1100	Changeable	
" 18	1000	"	
" 20	3900	Warm	
" 22	1900	Hot	Effect of treatment should show here.
" 26	850	Cloudy	
Aug. 3	930	Warm	
" 6	400	Cool	
" 8	270	Changeable	
" 10	210	"	
" 12	170	Warm	
" 15	160	"	
" 17	100	"	
" 19	54	Rain	

TABLE NO. 3.

Trap outside the incinerator set for 48-hour periods and baited with meat and molasses. The flies found here had followed the garbage collected in the town.

BLOW-FLIES.

Date	Number	Weather	Remarks
June 25	2300	Fair and warm	
" 30	6700	Very hot	
July 2	7350	Hot	
" 4	4000	Hot	Smoke from bush fires.
" 7	4650	Hot	Treatment of privies begun July 8th.

Date	Number	Weather	Remarks
" 9	2600	Hot	
" 12	9400	Hot and cloudy	
" 15	1300	Rain and cloudy	
" 18	5250	Changeable	
" 21	4000	Hot	
" 23	720	Rain	Effect of treatment of privies should show here.
" 25	2250	Changeable	
Aug. 4	640	Warm	
" 6	560	Cool	
" 8	130	Cool	
" 11	300	Warm	
" 13	140	Changeable	
" 15	400		
" 17	80	Warm	
" 19	60	Rain	

TABLE NO. 4.

Trap at the door of the cookhouse, set for 48-hour periods and baited with meat and molasses.

BLOW-FLIES.

Date	Number	Weather	Remarks
June 30	6300	Very hot	
July 2	10600	" "	
" 4	7000	" "	
" 6	3740	Changeable	
" 8	8000	Hot	Treatment of privies begun July 8th.
" 12	4540	Changeable	
" 14	1150	Rain and cloudy	
" 18	1550	Rain	
" 21	3600	Very hot	
" 23	1280	Rain; cool	Effect of treatment should begin to show here.
" 25	2500	Cloudy	
" 28	2400	Warm	
Aug. 5	1400	Clear	
" 8	1200	Cool	
" 11	700	Warm	
" 13	500	Changeable	
" 15	250	Warm	
" 18	80	Warm	
" 20	40	Rain and warm	

THE HOUSE AND STABLE FLIES.

The first experiments attempted on the house flies and those breeding in the manure about the stables were not so successful as those on the blow-flies. The measures made use of were those recommended in various text-books and pamphlets, and comprised for the most part stomach poisons, which to be effective must be eaten by the larvæ. The poison was either mixed with or sprinkled in solution on the manure. It was found necessary when applied in solution to use from a gallon to a gallon and a half per bushel of manure, depending on the amount of moisture present, to insure that larvæ in all parts would be affected. The chief objection to the use of stomach poisons is that the larvæ, being very active, will migrate to points other than where the poison has been applied before it has been eaten. Moreover, it is very slow to act and to get results at all the manure should be stored in bins to prevent the escape of the larvæ. The methods tried on the manure were as follows:—

(1) *Treatment with Hellebore.*

Hellebore in the powdered form is mixed with water at the rate of one-half pound per ten gallons of water. This mixture is allowed to stand twenty-four hours, when it is then ready for sprinkling on the manure. It has been recommended that, applied at the rate of ten gallons to every eight bushels of manure, it would destroy 88 to 99% of the larvæ

The results at Iroquois Falls failed to indicate any such efficiency. The instructions and strength recommended were carried out repeatedly both on manure in piles and in storage, but no destruction of the larvæ could be noticed. Different batches of hellebore and in strengths several times that recommended failed entirely to produce any larvicidal effects.

(2) *Treatment with Powdered Borax.*

The amount recommended in this case was 0.62 pounds per eight bushels of manure or about one pound per sixteen cubic feet of manure. It may be either mixed in the manure as a powder or dissolved in water and sprinkled on. The latter method is preferable. Difficulty is experienced in uniformly mixing so small a quantity of powder in that amount of manure. This larvicide has been estimated to destroy 98 to 99% of the larvæ, and to exert a toxic action on the eggs, thus preventing their hatching.

The experiments carried on with this chemical gave poor results. The strength recommended proved to be entirely inadequate either for killing the larvæ or destroying the eggs. Eggs hatched out even when borax had been applied at the rate of one-half pound per bushel of manure. It was only effective on the larvæ when used in quantities of one pound per bushel of manure kept in storage. Even at this strength it required forty-eight hours to get results, and it would therefore, be entirely useless on manure piles. This amount of borax not only makes the treatment very expensive, but it is said to destroy the fertilizing value of the manure.

(3) *Treatment with Iron Sulphate.*

Mixed with manure at the rate of two pounds per bushel of manure it had no effect on the larvæ, but entirely dried up the manure.

(4) *Treatment with Chloride of Lime.*

Chloride of lime, when used at the rate of four pounds per bushel of manure, was recommended as an effective larvicide. While it gave excellent results in the privies, where the larvæ were unable to crawl away it was not a success on the manure. Where the manure can be thoroughly broken up and stored in barrels or bins it will give fairly good results, but when placed on piles the larvæ are able to crawl away before being harmed, or live in some part where the bleach has not reached.

The use of chloride of lime for sprinkling the floors of horsestables has been advocated, and was tried at Iroquois Falls. If sprinkled on the moist surface of the floor it prevented the flies from feeding there to a certain extent, but this did not seem to be due to the fumes, but more because it dried up the manure. When swept up with the manure it failed to prevent eggs from hatching or to destroy the larvae. Owing to its disagreeable qualities it is difficult to have employees use it. If used in large quantities on the floors of the stables it may burn the horses or cause injury to their eyes by the fumes.

(5) *Treatment with Kerosene.*

The use of kerosene as a fly larvicide in manure piles has not been widely recommended, owing to the belief that it would be inflammable. When sprinkled on manure at the rate of one-half gallon per bushel and washed down with twice that amount of water it proved to be a very effective means of destroying the larvæ. The action on the larvæ was very rapid and no opportunity for their escape was presented. Under those conditions it was only necessary to treat that part of the pile which contained larvæ. The action was sufficiently rapid to immediately see what larvæ had been touched, and what had been missed.

(6) *Treatment with Lyman's Disinfectant.*

This is a commercial disinfectant and can be had in barrel lots at a considerable reduction in price. Solutions of various strengths were tried, and it was found best to use a 4% solution. It is sprinkled on the manure at the rate of a gallon to a gallon and a half per bushel of manure, and acts very much like kerosene. A 3% solution gave fair results, but it seems advisable to use the stronger. It appears also to destroy the eggs. Manure containing eggs was sprinkled with the solution, and no larvæ developed. It could, therefore, be applied either in the stable or on the manure after it has been removed.

(7) *Treatment with Creonoid.*

This is another commercial preparation, and is recommended chiefly as a fly-ease for cattle and horses, when sprayed on at full strength. It was found to be an effective larvicide when applied in a 4% solution similarly to Lyman's Disinfectant. The chief objection to its use is that it does not emulsify in water, but by stirring well it can be fairly evenly applied to the manure.

Other commercial disinfectants tried and which gave good results were as follows:—

4% solution of Creolin
3% solution of Pyxol
4% solution of Carbonol
1.5% solution of Formaldehyde: the 40% stock solution on the market being considered as of full strength.

A 6% Lysol solution failed to give satisfactory results.

From the results obtained with these solutions it would appear that the majority of commercial disinfectants on the market would be efficient when used in the proper strength. The problem is, then, to find the cheapest disinfectant which will give satisfactory results. By the use of Lyman's Disinfectant or Creonoid, when purchased in barrel lots, the cost would be about three and one-half cents per bushel of manure treated. In view of the fact that these chemicals act so rapidly it is necessary to treat only part of the pile and by this method the cost may be very much reduced. This is especially the case where the manure is piled by means of a litter carrier. Here the larvæ soon work down to the edge, and leave the rest of the pile free. In considering the cost of this treatment it is well to note that the amount of manure produced in one day by a working horse in the stable at feeding times and at night will be from a bushel to one and one-half bushels, when only a small amount of bedding is used.

Following are given the tables showing the flies caught in the traps.

TABLE NO. 5.

Trap at the Company's lower horse-stable, set for 48-hour periods and baited with molasses. Here the manure is piled outside the doors, and the flies were very numerous. The use of chloride of lime on the floors failed to prevent their development.

HOUSE AND STABLE FLIES.

Date	Number Caught	Weather	Remarks
June 27	3800	Very hot	
" 30	3800	" "	
July 1	6500	" "	
" 7	9000	Hot	
" 9	4900	"	
" 12	4900	Changeable	
" 15	3100	"	
" 18	5200	"	
" 21	6600	Hot	
" 25	2900	Warm; rain	
" 28	3700	Hot	
Aug. 1	2000	Warm	
" 6	1550	Cool	
" 8	1000	Cool	
" 10	1200	Changeable	Treatment of manure with disinfectant begun Aug. 3rd. Effect of treatment should show here.
" 13	1000	"	
" 15	1200	Warm	
" 17	800	"	
" 19	500	Rain	

TABLE NO. 6.

Trap at Overflow Stable, set for 48-hour periods.

HOUSE AND STABLE FLIES.

Date	Number Caught	Weather	Remarks
July 22	2720	Changeable	
" 25	9300	Warm; cloudy	
" 28	6400	Hot	
Aug. 4	3000	Warm	
" 6	1800	Cool	
" 8	820	Changeable	
" 11	940	Warm	Treatment with disinfectants begun Aug. 3rd. Effect of treatment should show here.
" 13	500	Changeable	
" 15	300	Warm	
" 17	250	Warm	
" 19	260	Rain	

TABLE NO. 7. DAIRY—TRAP A.

Set for 48-hour periods and baited with molasses. The small flies here were able to crawl out through the wire screening and this gave irregular counts until finer wire was substituted.

HOUSE AND STABLE FLIES.

Date	Number Caught	Weather	Remarks
June 27	2700	Very warm	
July 2	1270	Very hot	
" 6	4450	Hot	
" 9	16900	Very hot	
" 11	5100	Hot	
" 14	8600	Fine	
" 16	3100	Rain	
" 18	7500	Changeable	
" 23	4400	"	
" 25	2650	"	
" 28	12800	Hot	Treatment of manure with disinfectants begun.
" 30	5350	Changeable	
Aug. 3	3200	"	Effect of treatment should show here.
" 5	3650	"	Fine wire used in traps.
" 8	2600	Fair	
" 11	5700	Warm	
" 14	4000	Changeable	
" 17	3000	Warm	
" 19	670	Rain	

TABLE NO. 8.

Trap at Incinerator—48-hour periods.

HOUSE AND STABLE FLIES.

Date	Number Caught	Weather	Remarks
June 25	100	Warm	Nearly all flies caught were blow-flies at this time.
" 30	350	Very hot	
July 2	3160	Very hot	
" 4	100	Very hot	Smoky weather.
" 7	2000	Hot	
" 9	1750	Very hot	
" 12	6300	Hot	
" 15	900	Changeable	
" 18	3500	Changeable	
" 21	9400	Very hot	
" 23	1680	Changeable	
" 25	5250	Warm, cloudy	
Aug. 4	2560	Warm	Treatment of all manure with disinfectants begun.
" 6	2240	Cool	
" 8	1170	Fair	
" 11	700	Warm	
" 13	560	Changeable	Effect of treatment should show here.
" 15	1600	Warm	
" 17	720	Warm	
" 19	560	Rain	

This trap was baited for both blow-flies and house-flies, which followed the garbage collected throughout the town. The blow-flies at first were predominant, but were replaced later by the house-flies. Since these were drawn from the breeding grounds in various parts of the townsite, it was not expected to get results from the treatment as soon as at the stables. The table indicates that a reduction in the number of flies in the town was apparent.

DESTRUCTION OF LARVÆ BY FOWL.

Where hens are allowed to scratch through the manure pile daily they will destroy the great majority of the larvæ. This was the case at the horse stable near the incinerator. Four horses were kept here and the manure was piled outside the door. Flies following the garbage to the incinerator found this centre a very convenient place for laying their eggs. The eggs hatched into larvæ, and were quite numerous when the stables were cleaned, but after the fowl had scratched over it, larvæ could seldom be found.

STORAGE AND REMOVAL OF MANURE.

In Iroquois Falls it was not convenient to either store the manure or remove it at frequent intervals. It was found here that the majority of the eggs were laid before the manure was taken from the stable. Where conditions permit of the placing of manure in fly-tight bins before the flies have had an opportunity to deposit their eggs, satisfaction should result from such storage, but this can be accomplished only where there is an attendant constantly looking after the stables. The flies prefer fresh manure both for food and breeding grounds. If the eggs have been laid in the stable the development is not affected by storage in bins. The larvæ of the fly are not destroyed in this way.

It is common practice in many localities to have manure removed every ten days during the summer months. This period in itself may be of sufficient duration to produce the adult fly, or if the manure has been piled on the ground it will give the larvæ time to reach the pupa stage and crawl into the clay to later emerge as an adult. Even if the larvæ are drawn away with manure and placed in piles at some distance from buildings or spread on the land the growth to the adult stage will still proceed and the young fly will very early return to the nearest centre where food is available. The removal and spreading of manure on the land during the winter should destroy all larvæ and pupa which have hatched from eggs deposited in the fall, and whose development has been retarded owing to unfavourable climatic conditions.

MAGGOT TRAPS.

Maggot or larvæ traps have been recommended as a means of destroying larvæ in manure without the use of poisons, or other chemicals. A rack consisting of crosspieces spaced ½″ to 1″ apart is placed about one foot above a tank of water. The water need only be four or five inches deep. Manure fresh from the stable is placed on the rack, and watered daily. Advantage is taken of the fact that larvæ, prior to pupation, have a tendency to migrate to the edges of the pile in search of a dry area in which to pass the resting stage. The daily application of water is intended to increase the fermentation of the manure and make the centre of the pile less attractive to the larvæ. The trap works on the principle that the larvæ in search of a dry spot will go too far from the manure and fall into the water below.

Experiments on such a device were carried out at Iroquois Falls. In the first test it was found that larvæ were changing into pupa on the upper surfaces of the crosspieces. To avoid this the wooden frame was substituted by a wire netting and the deficiency in this respect was then overcome.

The results obtained indicated an estimated efficiency of 75%. It was found that while the larvae tend to crawl to the edge of the pile they are very sensitive to direct light and absence of cover, with the result that great masses of them formed into pupa at the edge of the pile. The application of water each day to the manure makes it more attractive to the fly about to deposit her eggs, and this means an increased period during which the manure must stay in place. The water sprinkled on the trap appeared to form channels through the manure and thus leave part of the pile quite dry. Since the manure from one horse in the stable at feeding time and at night will average from a bushel to one and one-half bushels per day, when only a small amount of bedding is used, it is evident that a larva trap for the average sized stable would require a very large area, and considerable expense. It seems essential that the manure should stay in place for at least ten days and probably longer.

No difficulty is encountered in keeping the larvæ under water. They seem unable to crawl when submerged, but they will live there for a long time, and will come to life if left in the air, even though they may appear dead when removed from the water.

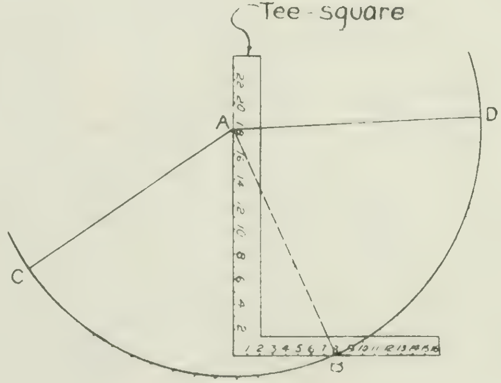
The use of a maggot trap for a stable with only one or two horses may be satisfactory for the reduction in the number of flies, but it will not eliminate the nuisance to the same extent as the application of chemicals to the manure. The area required for its use and the attention which should be given it will often make it more troublesome than other methods which give greater efficiency.

To Free a House from Flies.

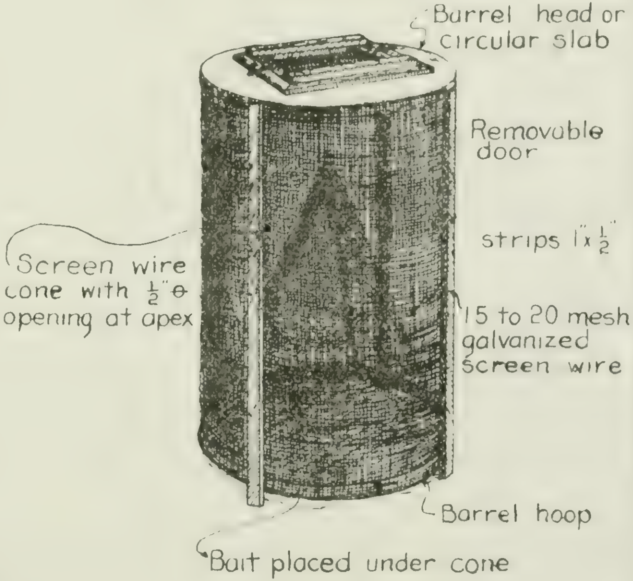
Where flies are numerous in a district and it is impossible to prevent their entrance into the houses there are several methods commonly employed against them. These should be considered only as secondary remedies, and special attention should be given the breeding grounds. These methods include poisons, sticky paper, traps, swatters, fumigation, brooms, etc. Fly-papers and swatters are useful when the number is not large. Poisons are quite serviceable except that the objection is raised to having dead flies drop into food and utensils. A cheap and effective poison is made by adding three teaspoonfuls of Formaldehyde (obtained at any drug store) to a pint of water or equal parts of milk and water. This is placed about the room in shallow dishes with a piece of bread in the centre for the flies to alight and feed. This poison kills quite rapidly and may be effective before the fly gets very far from the dish. If the flies are merely to be driven out of the room this can be accomplished by making a brush or broom of pieces of paper or cloth and driving them out through an open door.

Where a room can be well closed up the flies can often be killed by burning sulphur. This method is successfully used at some of the meat packing houses against the blow-flies. All flies should be swept up and burnt directly this is over, for some may only be stunned and will rapidly revive when placed in fresh air. The objection to sulphur is that it may have an injurious effect on the contents of the room, especially on fabrics and metals. The amount of sulphur necessary will depend upon the size of the room and the possibility of escape of the fumes around the doors and windows. The amount required for average conditions will vary from one to two pounds per 1000 cu. ft. of space. The fumigation should last for three or four hours if possible.

CONICAL FLY TRAP



Pattern for construction of cone


Barrel head or circular slab
Removable door
strips 1" x ½"
Screen wire cone with ½" ⌀ opening at apex
15 to 20 mesh galvanized screen wire
Barrel hoop
Bait placed under cone

FLY TRAPS.

Fly-traps are valuable as an auxiliary means for combating the fly-nuisance, but they are not to be relied upon as a complete method for keeping down the numbers. It has been suggested that traps, properly baited, and set by the breeding-grounds, could be used as the entire means of abating the nuisance, but this does not seem to work out well. Too many flies escape the traps, especially when other sources of food are nearby, to warrant the use of traps alone.

To get the greatest efficiency from fly traps they must be baited properly and set in the most convenient locality. Most measures against the adult flies are used about dwellings, and not where the eggs are laid. Flies caught in this way have quite likely deposited their eggs and left a swarm of progeny to follow them to the houses. The best place to set traps is undoubtedly at the manure piles, in order that the young flies may be caught before any eggs have been deposited.

The bait required for these traps will depend upon the kinds of flies in the vicinity. Blow-flies are strongly attracted by fresh meat, while molasses mixed with water seems most suitable for the house-flies. The bait should be given attention every day and the trap set in a warm, bright location. These traps are often ineffective in a house, because these conditions are not fulfilled.

It is generally recognized that the trap most suitable is that of the conical shape in which the bait is placed at the bottom, and the flies crawl upwards through a small opening at the point of the cone. This can readily be made at home at a very moderate expense by following these instructions.

A HOME MADE FLY-TRAP.

The following instructions are given for those who desire to make one of these fly-traps at home.

The trap consists essentially of a screen cylinder with a frame made of a barrel head and hoops, in the bottom of which is inserted a screen cone. Convenient measurements for the trap are:—height of cylinder 24 inches; diameter 12 to 18 inches; height of cone 18 to 20 inches and diameter at the base the same as that of the cylinder. The material necessary for this trap consists of one new or second-hand wooden barrel hoop, one barrel head or round board 3/4" thick for the top, four laths for sides, a few feet of strips 1 to 1 1/2 inches wide by one-half inch thick (portions of old boxes will be suitable), 10 to 12 mesh galvanized screening (18 mesh wire is required for a trap for small flies), 24 inches wide for the sides of the trap, an ounce of carpet tacks, and two turn buttons which can be made of pieces of wood. The cost of material for this trap is not great and in many cases the barrel hoops, laths and strips can be obtained without expense. Two yards of screen wire will be sufficient for a trap 12 inches in diameter.

To Make the Trap.

In constructing the trap the hoop is bent in a circle (outside diameter equal to the size of the trap required) and nailed together, the ends being trimmed to give a close fit. This forms the bottom of the frame. The top, made of a barrel head or board cut to form a circle is held together by thin strips nailed on the under side. An opening for removal of the dead flies is cut in the centre of the top, and a door fitted to this. The door consists of a narrow frame covered with a screen, well-fitted to the trap and held in place by buttons. A sufficient length of screen wire to reach around the top of the trap with an inch or two for overlapping is then cut and tacked to the top of the frame. The cone is next made and the dimensions of the wire for this is most easily obtained by first cutting out from paper a cone of proper size.

To form the paper cone draw an arc of a circle CD (as in the accompanying diagram) of radius equal to the length of the side of the cone AB. To find this length AB measure off on the arms of a T square lengths equivalent to the height of the cone and to the radius of the base. Join these two points A and B with a string the length of which is the radius of the cone. Draw on a sheet of paper an arc of a circle with radius AB. On this arc measure off, using short lengths, a distance CD equivalent to the inner circumference of the barrel hoop used for base. For a 12 inch hoop this distance is 38 inches plus 1½ inches overlap for joining the two edges. For a 16 inch hoop it is 50 inches. Draw lines joining C to A and D to A. Sufficient width for overlapping the edges should be left either along the side of CA or AD. Using this paper cone as a pattern the wire cone can readily be cut out and the sides wired together. A small opening is then cut in the top of the cone to allow the flies to pass through. The base of the screen cone is tacked to the inside of the hoop. Next join the edges of the wire on the cylinder of the trap. This can readily be done by lacing with a fine wire. The next procedure is to insert the cone in the cylinder of the trap and tack the bottom edges of the screen wire to the outside of the hoop. The trap is then made firm by nailing four laths or strips to the top and bottom frames. In order to give the flies sufficient room to enter under the trap the laths should extend about one inch below the bottom frame.

SUMMARY.

The experiments conducted at Iroquois Falls indicated that a municipality need not be troubled with the yearly fly nuisance. The blow-flies in this municipality were reduced in numbers to such an extent that they might be considered as entirely eliminated. This was accomplished by merely preventing their development in the privies and trapping those which had got beyond the larva stage before the treatment was begun. Such treatment is not only applicable to Iroquois Falls, but may be used with equal success in any municipality. The search for a suitable larvicide to use on the manure piles gave the house and stable flies an opportunity to greatly increase in numbers. When the application of disinfectants to the manure was in progress a reduction in the counts took place, and would no doubt have shown up to greater advantage had it been possible to continue the experiments longer. It cannot be said that these low counts were due to weather conditions, for in camps nearby the flies were in greatest numbers when these reductions occurred at Iroquois Falls. Where the traps were set indoors, particularly at the Dairy, the cooler weather would have a tendency to drive the flies indoors and thus increase the numbers caught in the traps.

The use of disinfectants as larvicides is quite reasonable in cost, and a very simple means of control. The stock solutions do not occupy much space, and it requires no technical skill for their application. The benefits from the elimination of the fly nuisance is well worth the expense involved, not only from the decrease in the danger of disease, but economically as well. The saving of meat is surely worth more than the cost of chloride of lime required for the privies. The increased rest which will result for the horses is no small consideration, and the possibility of saving food supplies, together with the general comforts to be had from the absence of flies, must be fully considered in estimating the cost of such preventive measures.

Much of the success of the experiments carried on at Iroquois Falls was due to the excellent co-operation and assistance received from the local Board of Health and the company officials, who were at all times willing and ready to aid in any way possible. The citizens, too, were always ready to make possible the proper working of the methods, under investigation. By adopting the methods found successful in these experiments it is quite possible to gain absolute control of the annual summer fly nuisance

INVESTIGATIONS IN THE SANITATION OF SWIMMING POOLS.

By A. V. Delaporte, B.A.Sc.

The unsatisfactory situation with respect to the control of public and private swimming pools was forcibly brought to the attention of the Division of Sanitary Engineering during the past year. The investigation herein reported upon arose from repeated requests of parents and others interested for information as to the condition of certain pools, and for instruction as to how the present unsatisfactory situation might be corrected.

Pools receive constant pollution during bathing periods by mucous, mouth rinsing, expectorant and body pollution from every bather and from bathing suits, where bathing suits are permitted, which are not properly sterilized. Shower baths, as taken by bathers, are not altogether effective, particularly in cleansing the perineal regions. Few of the officials at the pools make any investigation in the medical history of the bathers. This means that the dissemination of disease is controlled entirely by—(1) The shower bath before bathing; (2) By purification of the water in the pools; and as has already been observed, the shower baths are ineffectual. Therefore, the main controlling factor is the purification of the water.

The diseases which may be communicable through the agency of swimming pools are divided into three classes, namely, intestinal, eye and ear, and venereal. To this there should be added a fourth class, namely, respiratory. (Manheim, Parks, Public Health and Hygiene.)

The investigation of conditions for the purpose of this report was confined to four pools. Two of the tanks—"A" and "B"—were almost identical in equipment. They had white tile floors, draining to a gutter, a trough around the tank to carry away splash, expectorant, etc. The water was continuously recirculating through pressure mechanical filters, and chlorinated with bleaching powder.

Tank "C" was in a municipal bath house. It was of concrete, with a gutter, but no trough. The water was changed every week. The only purification of the water was chlorination by the addition of bleaching powder.

TABLE NO. 1

BACTERIOLOGICAL ANALYSES

Swimming Pools Tank A.

Date	Hour Collected	Bacterial Counts on Nutrient Agar						Colon Bacilli						No. of Bathers	Remarks
		48 Hours Count 18°-22°C			24 Hours Count, 37° C			48 Hours at 37° C							
	P.M	.01cc	.10cc	Count per CC	.01cc	.10cc	Count per CC	1cc	1cc	5cc	10cc	25cc	50cc		
1921															
Dec. 12	7.30		62			25 Spr.		+	+					0	First day after
	7.45		210			90 Spr.			+	+				1	fresh supply in
	8.00		40			70 Spr.		+	+					0	tank. No
	8.45		208			100		+	+					36	chlorine yet.
	9.00		200			310			+	+				7	
	9.15		240			40 Spr.			+	+				6	
	9.30		120			50 Spr.		+	+					16	
	9.45		65			30 Spr.		+	+					20	
Dec. 19	7.30		1			4								8	Res. Cl. at 4.30
	7.45		2			1 Spr.								25	p.m. .09 p.p.m.
	8.00		3			2								4	
	8.15		12			8								12	at 9.30 p.m.
	8.30		14			48			+	+				27	.06 p.p.m.
	8.45		10			2								15	
	9.00		17			42					+			12	
	9.15		23			36					+			8	
	9.30		60			140				+	+			11	
Dec. 28	7.30		0			11					+	+		56	
	7.45		0			12							+		Res. Cl.
	8.00		0			5							+	2	at 11.20 a.m.
	8.15		0			10 Spr.				+	+				.10 p.p.m.
	8.30		0			0				+	+			5	
	8.45		0			2				+	+			10	
			0			8							+		West side.
			0			0				+	+				South side.
	9.00		0			3				+	+			5	
	9.15		0			3					+	+		4	

Jan. 4 1922	3.30			0			3				—	—			
Jan. 5	7.30			0			8				—	—		40	
	7.45			0			40 Spr.				—	+		6	Res. Cl. at 3.30
	8.00			2			24				—	—		3	p.m. .08 p.p.m.
	8.15			0			200				—	+		3	
	8.30			0			50 Spr.			+	+			2	
	8.45			0			15 Spr.				—	+		1	
	9.00			0			35			+	+			2	
	7.15			0			Spr.				—			5	
	9.30			3			6 Spr.				+	+		1	
Jan. 17															Residual Cl. at
Jan. 18	7.30			7			9					+	+	0	3.00 p.m. .15
	7.45			2			3					—	+	20	p.p.m.
	8.45			0			10					+	+	8	
	8.30			9			36			+	+			50	
	8.45			4			50					+	+	8	
	9.00			9			72		+	+				4	
	9.15			7			19				+	+		4	
	9.30			1			30				+	+		2	
Jan. 24	3.30			1			0					—	—	0	Res. Cl. .07 p.p.m
Feb. 1	4.00			0			2					—		1	Res. Cl. .14p.p.m.
Feb. 2	7.30			0			0					+		60	
	7.45			1			2 Spr.					—	—	5	
	8.00			2			7					—	—	9	
	8.15			0			0					—	—	21	
	8.30			0			3					—	—	18	
	8.45			0			0					—	—	12	
	9.00			0			1						+	7	
	9.15			0			0					+		12	
Mar. 1	7.30			0								—	—	0	Res. Cl. in after- noon
	7.45			0			0					—	—	0	was 0.4 p.p.m.
	8.00			0			0					—	—	0	At end of evening.
	8.15			0			0					—	—	3	there was Res. Cl.
	8.30			0			0					—	—	40	in the water still.
	8.45			0			0					+	+	50	
	9.00			0			0					—	—	10	
	9.15			0			0					—		10	
	9.30			0			0					—	—	10	
Mar. 30	8.00			10			18				+	+		6	Res. Cl. in after- noon
	8.15			18			17					+	+	6	was .13.p.p.m.
	8.30			15 Spr.			18			+	+			6	
	8.45			33			42		+	+				8	
	9.00			12			18 Spr.		+	+				24	
	9.15			13			8		+	+				10	

Tank "D" belonged to a woman's physical culture school. It was built of concrete—had no gutter or trough. The water was changed every two days, and chlorinated with bleaching powder.

The bathers in all the pools were required to take shower baths before entering the pool. In the case of tank "D" this was quite ineffectual. The showers were exposed to the pool; there was a male swimming instructor, and the bathers took their shower baths in their bathing suits. There was no sterilization of the bathing suits. No bathing suits were allowed in tanks "A," "B" and "C."

Samples were secured from the pools before bathing commenced, and every fifteen minutes during the bathing period, except in the case of "D." The observations were made at times calculated to give a maximum of pollution. In every instance where the treatment was at all effectual, the pools were practically sterile before the bathing commenced. After bathing commenced the bacterial pollution in some instances reached as high as 10,000 colonies per c.c. at 37°C. with 1000 B.Coli per 100c.c. The tanks operated on the fill and draw plan were not appreciably worse than those continuously re-circulated and filtered.

The authorities at tank "A" kindly consented to permit our observations over a period of time. One of our objects was to see the maximum time the water in the pool could be maintained in good physical condition, as well as sterile. This pool was troubled with an algae growth in summer weather, and experiments to control this growth were also made.

An attempt was made to get a series of bacterial results with the water containing graduated amounts of free chlorine. This was difficult, because the amount of organic impurities varied greatly from day to day, and it was impossible to control the excess of free chlorine.

The bacterial results are by no means uniform, due probably to the variation in numbers and cleanliness of the bathers. It is significant that the bacterial counts at blood temperature are generally greater than the bacterial counts at 18°C. The work showed that, to have a sterile water throughout the bathing period it was necessary to have a large enough excess of free chlorine to show a residual chlorine after the bathing was over. In tank "A" it was found that, if the residual chlorine in the pool before bathing commenced was in excess of 0.2 p.p.m., the water in the pool would remain practically sterile throughout the bathing period.

The water in tank "A" is re-filtered continuously through pressure mechanical filters. Theoretically, the entire volume of water in the tank was passed through the filters in something less than a day. The filters are depended upon for clarification only. The engineer in charge of the pool could re-filter the water continuously for about three months, adding a small amount of water daily to make up for wastage. *Then filtration became ineffective, and the water in the pool became cloudy. This occurred when the alkalinity of the water was exhausted, due to the continuous addition of alum used in the filtration apparatus.* To prevent this condition arising, washing soda was added to the pool when the alkalinity was reduced to 20 p.p.m. This rendered it possible to retain the water in the pool until the time of writing, a period of about ten months. The water is as clear and sterile as the day the tank was filled.

TABLE NO. 2.

BACTERIOLOGICAL ANALYSES

Swimming Pools. Tank B.

Date	Hour collected	Bacterial Counts on Nutrient Agar						Colon Bacilli 48 Hours at 37° C						No. of Bathers	Remarks
		48 Hours Count 18°-22° C			24 Hours Count, 37° C										
	P.M.	.01cc	.10cc	Count per cc	.01cc	.10cc	Count per cc	.1cc	1cc	5cc	10cc	25cc	50cc		
1921															
Dec. 8	6.15	500			1				+	+					
	6.30	1			3				+	+					
	6.45	0			1					+	+				
	7.00	0			0					+	+				
	7.15	2			1					+	+				
	7.30	0			1					+	+				
	7.45	150			1					+	+				
	8.00	0			3			+	+						
	8.15	0			0				+	+					
	8.30	1,000			2				+	+					
	8.45	0			2					+	+				
	9.00	110			0				+	+					
	9.15	5			1				+	+					
	9.30	60			4					+	+				
	9.35	0			2 Spr.				+	+					Effluent from Pool
		0			1				+	+					
Dec. 12	7.45		6			24			+	+					
	8.00		9			27			+	+					
	8.15		1			24				+	+				
	8.30		2			5				+	+				
	8.45		5			4			+	+					
	9.00		7			6				+	+				
	9.15		6			4		+	+						
	9.30		2			1				+	+				
	9.45		16			2			+	+					

TABLE NO. 3

BACTERIOLOGICAL ANALYSES

Swimming Pools

Tank C

	Hour collected	Bacterial Counts						Colon Bacilli 18 Hours at 37°C								Number of Bathers	Remarks
		48 Hours Count 18°-22°C			24 Hours Count, 37°C												
	P.M.	.01cc	.10cc	Count per cc	.01cc	.10cc	Count per cc	.001cc	.01cc	.1cc	1cc	5cc	10cc	25cc	50cc		
1921																	
Dec. 21	2.00		0			8						—	—				Residual Cl. .04 p.p.m.
	2.15		5			6 Spr.						—	—				
	2.30		1			1						—	—				
	2.30		22			2 Spr.						—	—				North end of pool.
	2.30		2			Spr.						—	—				South end of pool
Dec. 28	2.15		0			0							+	+			
	2.30		0			1						+	+				Res. Cl. .048. p.p.m.
	2.45		0			2						—	+				
	2.45		0			3								—	—		
	2.45		0			1							—	+			South End of pool
Dec. 31			0			3							+	+			Middle of pool. Shallow end. Res. Cl. .02 p.p.m.
Saturday afternoon			0			2								+	+		Shallow end
			0			0								+	+		Deep end
			0			2								+	+		Deep end

TABLE NO. 4

BACTERIOLOGICAL ANALYSES

Swimming Pools

Tank D.

Date	Hour collected	Bacterial Counts						Colon Bacilli 48 Hours at 37° C								No. of Bathers	Remarks
		48 Hours Count 18° -22° C			24 Hours Count 37° C												
	P.M.	.01cc	.10cc	Count per CC	.01cc	.10cc	Count per CC		.001cc	.01cc	1cc	5cc	10cc	25cc	50cc		
1922																	
Mar. 21	3.45			110 Spr.			1,000							+	+		
				40			1,500						+	+			
				80 Spr.			70 Spr.						+	+			
				60 Spr.			110 Spr.					+	+				
													+	+			
Mar. 22			170			1,000							+	+			
	9.45		80			70							+	+			
			100			200					+	+					
			250			300						+	+				
			90			210							+	+			
Mar 23			350			300						+	+				
	9.00		60 Spr.			200 Spr.					+	+					

TABLE NO. 5

BACTERIOLOGICAL ANALYSES

SUMMARY

Swimming Pools — Tank A

P.P.M. Residual Cl. Before Bathing	B. Coli Per 100cc.			Bacteria per cc. on nutrient agar.					
				at 18-22° C			at 37° C		
	Ave.	Max.	Min.	Ave.	Max.	Min.	Ave.	Max.	Min.
0.0	787	1,000	100	1,436	2,400	400	887	3,100	300
0.08	6	20	0	0.5	3	0	42	200	3
0.09	15	100	0	158	60	1	140	310	0
0.10	13	20	10	0	0	0	5.7	14	8
0.13	39	100	4	16	35	12	20	42	2
0.14	1	4	0	0.2	2	0	1.6	7	0
0.15	21	100	2	4.5	9	0	27	72	0
0.4	0	0	0	0	0	0	0	0	3

This table shows the averages of 10 and 15 minute samples taken during the maximum bathing period per week. The wide variation is due to the variation in the number of bathers using the pool during the bathing period.

To overcome the algae growths, copper sulphate was added to the pool, after bathing was over Saturday night. The precipitated copper was removed by the filters before bathing commenced Monday, removing the remotest possibility of poisoning from this source. Analyses of the water showed that not a trace of copper was left in solution.

Tank "B" was identical with tank "A" in equipment. The treatment, however, varied in the amounts of alum and chlorine added. There was some doubt among the officials about the advisability of increasing the dosage of chlorine to a point where it would be effectual. When the dosage was increased to 0.2 p.p.m., it was as effective as in tank "A."

Tanks "C" and "D" were dependent on disinfection by bleaching powder only. The operation of the pools was haphazard, and the attendants unwilling to follow directions. This is clearly shown by the bacterial results. Tank "D" was in bad condition, and should really not be permitted to operate without making some radical changes in control.

The sanitary chemical analysis of samples from the various tanks showed that, in tanks "A" and "B," the filtration was preventing any noticeable increment in the organic matter in the water. Tanks "C" and "D" operated on a fill and draw basis and showed a comparatively heavy pollution. This heavy pollution in the tanks without filters necessitates a heavier dosage with chlorine in order to leave sufficient residual chlorine to safeguard the bathers.

These four tanks are situated in a municipality where they are under constant supervision of a vigilant local Board of Health. Conditions in pools, not so favourably situated have not yet been investigated.

TABLE NO. 6

CHEMICAL ANALYSES

Swimming Pools

Tank A

Serial No.	Date	PARTS PER MILLION												
		Solids			Nitrogen					Oxygen consumed	Chlorine	Oxygen Dissolved	Temp.
	1921	Total	Diss.	Susp.	Free Ammonia	Alb. Ammonia	Res. Cl.	Nitrites	Nitrates				
1	December 12	153	140	13	.32	.5	nil	Trace	nil	1.13	14	7.2	25° C
2	December 12	135	126	9	.46	.42	nil	Trace	nil	1.07	14	7.3	25°
3	December 19	167	124	43	.88	.38	.09	.1	nil	.9	20	5.9	25°
4	December 19	163	124	39	.84	.52	.09	.1	nil	1.2	20	5.9	25°
5	December 28	175	160	15	.52	.16	.1	3.0	1.0	1.07	22	5.6	25°
6	December 28	185	180	5	.60	.16	.1	3.0	.8	.86	22	5.7	25°
	1922												
7	January 4	207	180	27	.22	.48	.09	1.0	1.0	1.3	24	1.3	24.7°
8	January 17	141	130	11	.38	.26	.15	3.0	.2	2.08	26	7.0	25.5°
9	January 24	183	160	23	.32	.36	.07	.05	1.5	1.04	27.5	6.7	24.5°
10	February 1	141	130	11	.30	.28	.14	Trace	.3	1.74	30	6.8	24.5°
11	February 8	164	150	14	.40	.21	.10	nil	.7	2.3	33.5	5.7	25.0°
12	February 16	213	192	21	1.28	.88	nil	0.8	1.5	1.16	31.5	4.8	29°
13	February 28	418	206	12	1.04	.88	.4	nil	.7	.116	34.5	5.1	26°

TABLE NO. 8

CHEMICAL ANALYSES

Swimming Pools

Tank B

PARTS PER MILLION

Serial No.	Date	Solids			Nitrogen					Oxygen Con-sumed	Chlorine	Oxygen Dis-solved	Temp.
	1922	Total	Diss.	Susp.	Free Am-monia	Alb. Am-monia	Res. Cl.	Nitrites	Nitrates				
C.Y.	March 28	208.4 Loss 74.8	201.5	6.9	.65	.36	0.18	nil	2.0	.81	18.0	5.5	25.5° C

Remarks:—36.96 p.p.m. Alk. to M.O. 4.48 acid to Phenolphthalein.

TABLE NO. 9.

CHEMICAL ANALYSES

Swimming Pools

Tank C

.	Oxygen Consumed	Free Alk.	Alb. Amn.	Nitrites	Nitrates	Cl.	Dissolved Oxygen	Temp.
Dec. 21	1.06	.84	.16	nil	nil	20	5.9	23° C
Dec. 28	1.07	.2	.2	nil	.06	18	6.	
Dec. 31	1.6			.5	nil	21	8.7	

TABLE NO 10

CHEMICAL ANALYSES

wimming Pools

Tank D

Serial No.	Date	PARTS PER MILLION											
		Solids			Nitrogen					Oxygen Con-sumed	Chlorine	Oxygen Dis-solved	Temp.
		Total	Diss.	Susp.	Free Am-monia	Alb. Am-monia	Res. Cl.	Nitrites	Nitrates				
M.E.	1922												
M.E.1	March 21	155.6 Loss 38.8%	145.8	9.8	.286	.56	nil	Trace	0.1	6.96	15.0	5.0	29.0° C
M.E.2	March 28	170 Loss 80.4	166.8	3.2	.22	.12	0.15	nil	0.3	1.97	17.0	5.0	29.0°

TABLE NO. 7

MINERAL ANALYSES

Swimming Pools Tank A

Serial No.	Date	Total Solids	SiO_2	Al_2O_3 Fe_2O_3	CaO	MgO	Na_2O + K_2O	Cl	Alkalinity due to BiCarbonates
	1921								
1	December 12	153 Loss 63	1	8.0	58	15.4	4	14	54.5
2	December 12	135 Loss 51	1	4.0	40	10.4	4	14	48.1
3	December 19	167 Loss 64	nil	1.2	45	13	3	20	43.7
4	December 19	163 Loss 64	nil	1.0	44	14	3	20	48.1
5	December 28	175 Loss 56	nil	6.0	48	16	5	22	36.0
6	December 28	185 Loss 66	nil	6.0	49	15	4	22	41.0
	1922								
7	January 4	207 Loss 102	nil	10.0	46	16.1	4.5	24	43.7
8	January 17	141 Loss 37	nil	6.0	57	12	8	26	24.9
9	January 24	183 Loss 74	nil	8.0	59	12	6	27.5	52.5
10	February 1	141 Loss 59	nil	7.0	56	10	10	30	25.4
11	February 8	164 Loss 75	nil	6.0	61	12	5	33.5	38.7
12	February 16	213 Loss 58	nil	5.0	40	21.5	5.5	31.5	38.7
13	February 28	218 Loss 83	nil	3.0	78	8.3	9.0	37.5	44.

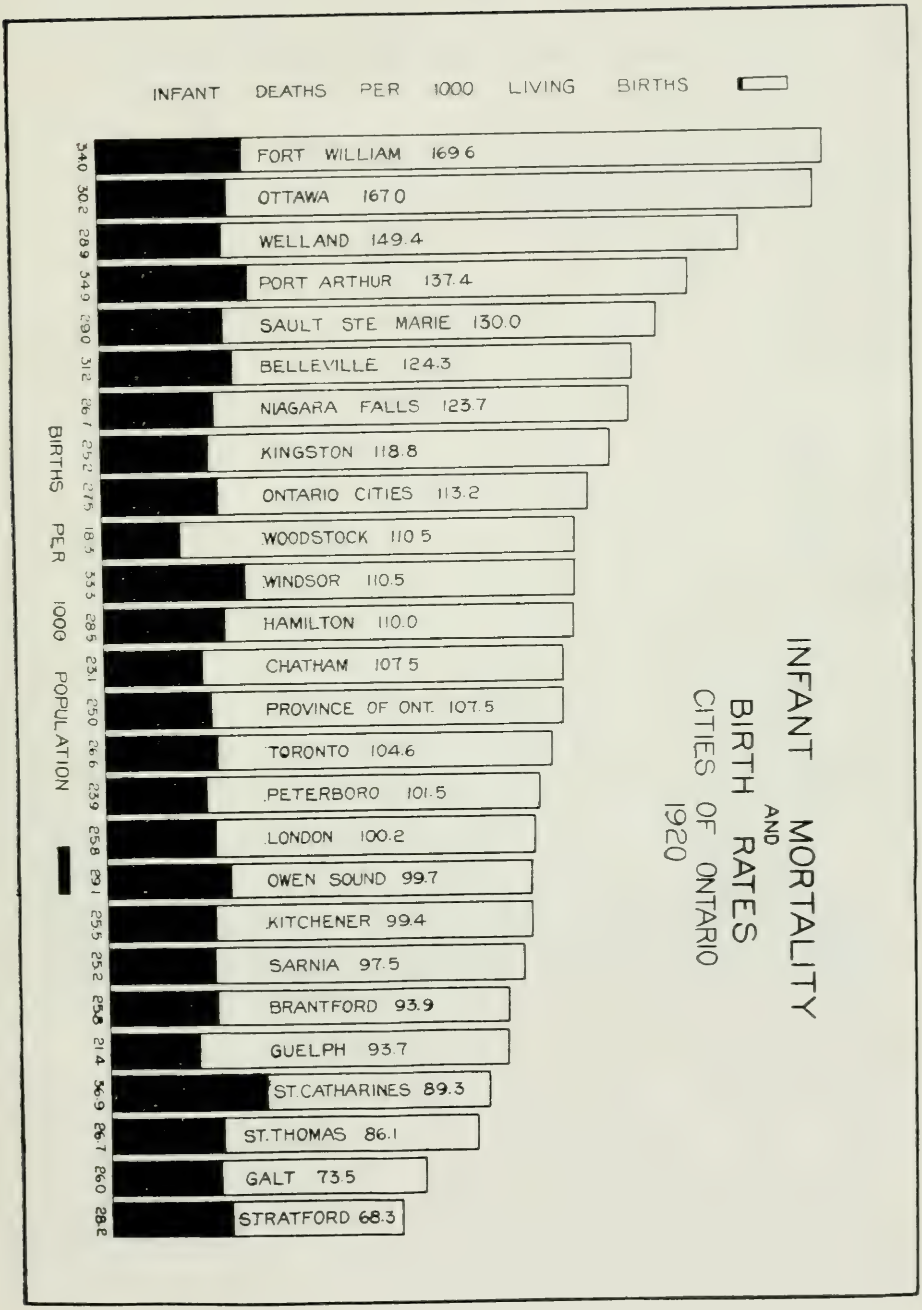
With the evidence in hand it would seem advisable to make an extended investigation, so that the situation throughout the Province could be gradually brought to public attention.

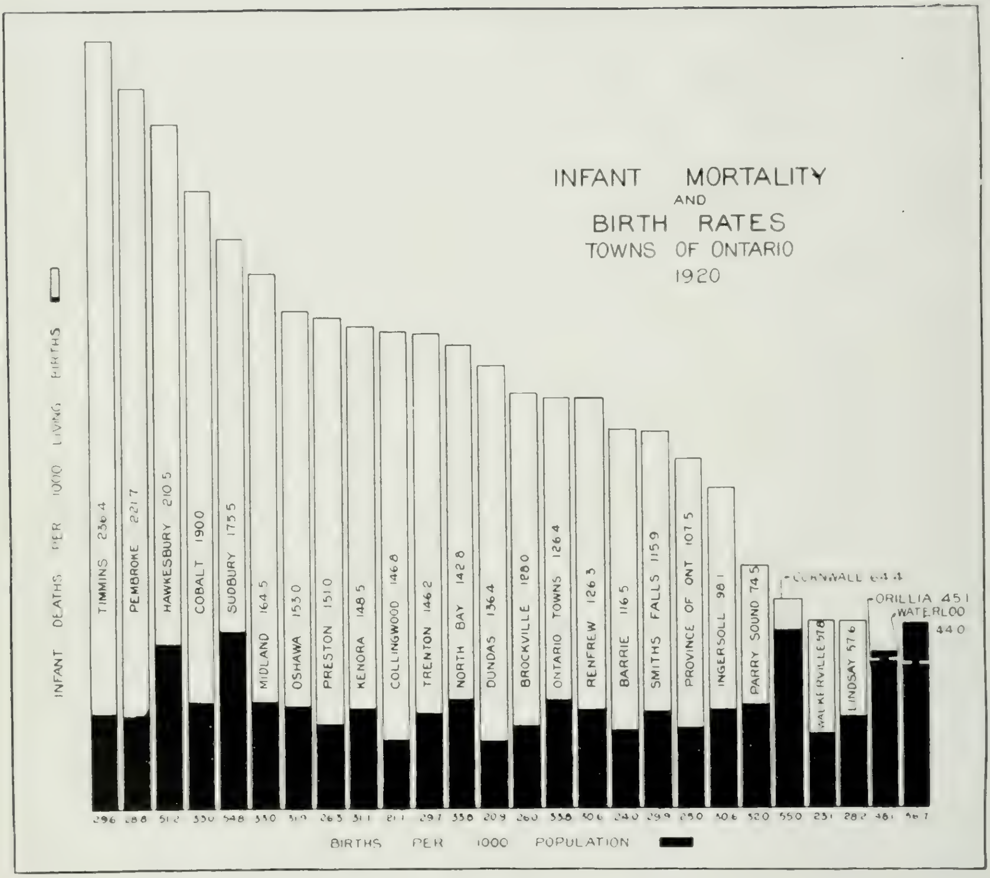
It is recommended that:—

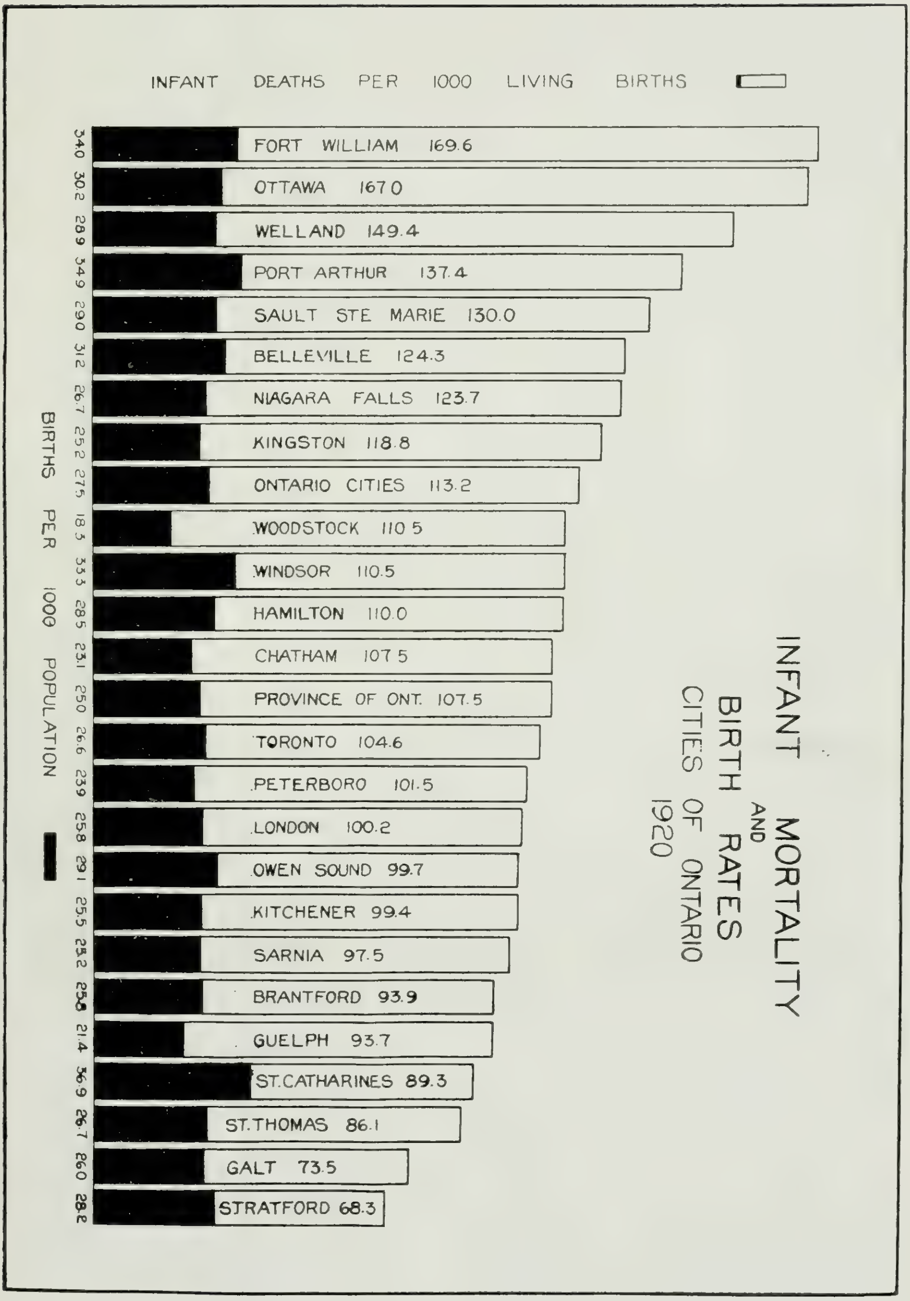
(1) The management of all swimming pools be required to use sufficient free chlorine in the water of the pool so that there shall at all times be residual free chlorine present. With the colorless waters of old Ontario 12 to 14 pounds of bleaching powder per million gallons of water daily would ordinarily be sufficient.

(2) In pools where bathing suits are worn, the suits to be sterilized after use, and bathers required to take a shower while nude, before entering the pool. (It might be advisable to specially treat the water used for showers with chlorine.)

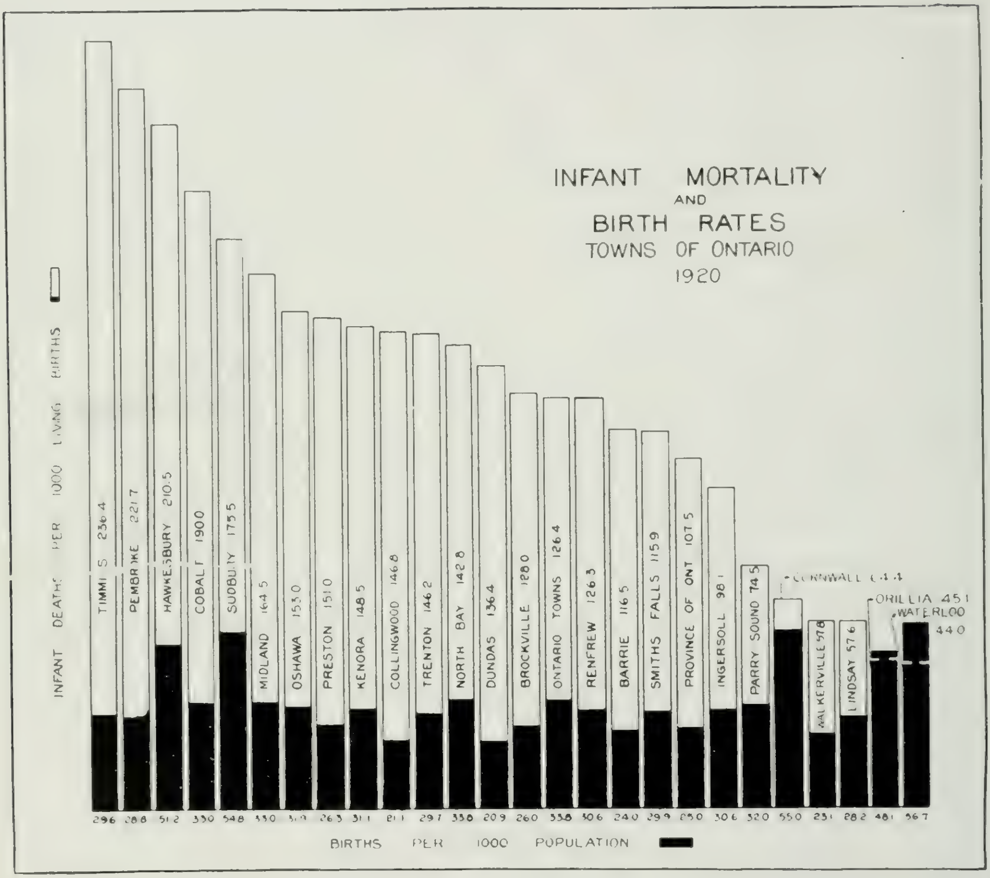
(3) All new pools to be required to have proper gutters, troughs and drainage.


INFANT MORTALITY
AND
BIRTH RATES
CITIES OF ONTARIO
1920
INFANT DEATHS PER 1000 LIVING BIRTHS ▭
BIRTHS PER 1000 POPULATION ■
34.0 FORT WILLIAM 169.6
30.2 OTTAWA 167.0
28.9 WELLAND 149.4
34.9 PORT ARTHUR 137.4
29.0 SAULT STE MARIE 130.0
31.2 BELLEVILLE 124.3
26.1 NIAGARA FALLS 123.7
25.2 KINGSTON 118.8
27.5 ONTARIO CITIES 113.2
18.3 WOODSTOCK 110.5
33.3 WINDSOR 110.5
28.5 HAMILTON 110.0
23.1 CHATHAM 107.5
25.0 PROVINCE OF ONT. 107.5
26.6 TORONTO 104.6
23.9 PETERBORO 101.5
25.8 LONDON 100.2
29.1 OWEN SOUND 99.7
25.5 KITCHENER 99.4
25.2 SARNIA 97.5
25.8 BRANTFORD 93.9
21.4 GUELPH 93.7
36.9 ST. CATHARINES 89.3
26.7 ST. THOMAS 86.1
26.0 GALT 73.5
28.2 STRATFORD 68.3


INFANT MORTALITY
AND
BIRTH RATES
TOWNS OF ONTARIO
1920
INFANT DEATHS PER 1000 LIVING BIRTHS
TIMMINS 236 4
PEMBROKE 221 7
HAWKESBURY 210 5
COBALT 190 0
SUDBURY 175 5
MIDLAND 164 5
OSHAWA 153 0
PRESTON 151 0
KENORA 148 5
COLLINGWOOD 146 8
TRENTON 146 2
NORTH BAY 142 8
DUNDAS 136 4
BROCKVILLE 128 0
ONTARIO TOWNS 126 4
RENFREW 126 3
BARRIE 116 5
SMITHS FALLS 115 9
PROVINCE OF ONT 107 5
INGERSOLL 98 1
PARRY SOUND 74 5
CORNWALL 64 4
WALKERVILLE 57 8
LINDSAY 57 6
ORILLIA 45 1
WATERLOO 44 0
296
288
512
330
548
330
319
263
311
211
297
338
209
260
338
306
240
299
250
306
320
550
231
282
481
467
BIRTHS PER 1000 POPULATION



INFANT MORTALITY AND BIRTH RATES CITIES OF ONTARIO 1920


INFANT MORTALITY
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1920
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PRESTON 151 0
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COLLINGWOOD 146 8
TRENTON 146 2
NORTH BAY 142 8
DUNDAS 136 4
BROCKVILLE 128 0
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SMITHS FALLS 115 9
PROVINCE OF ONT 107 5
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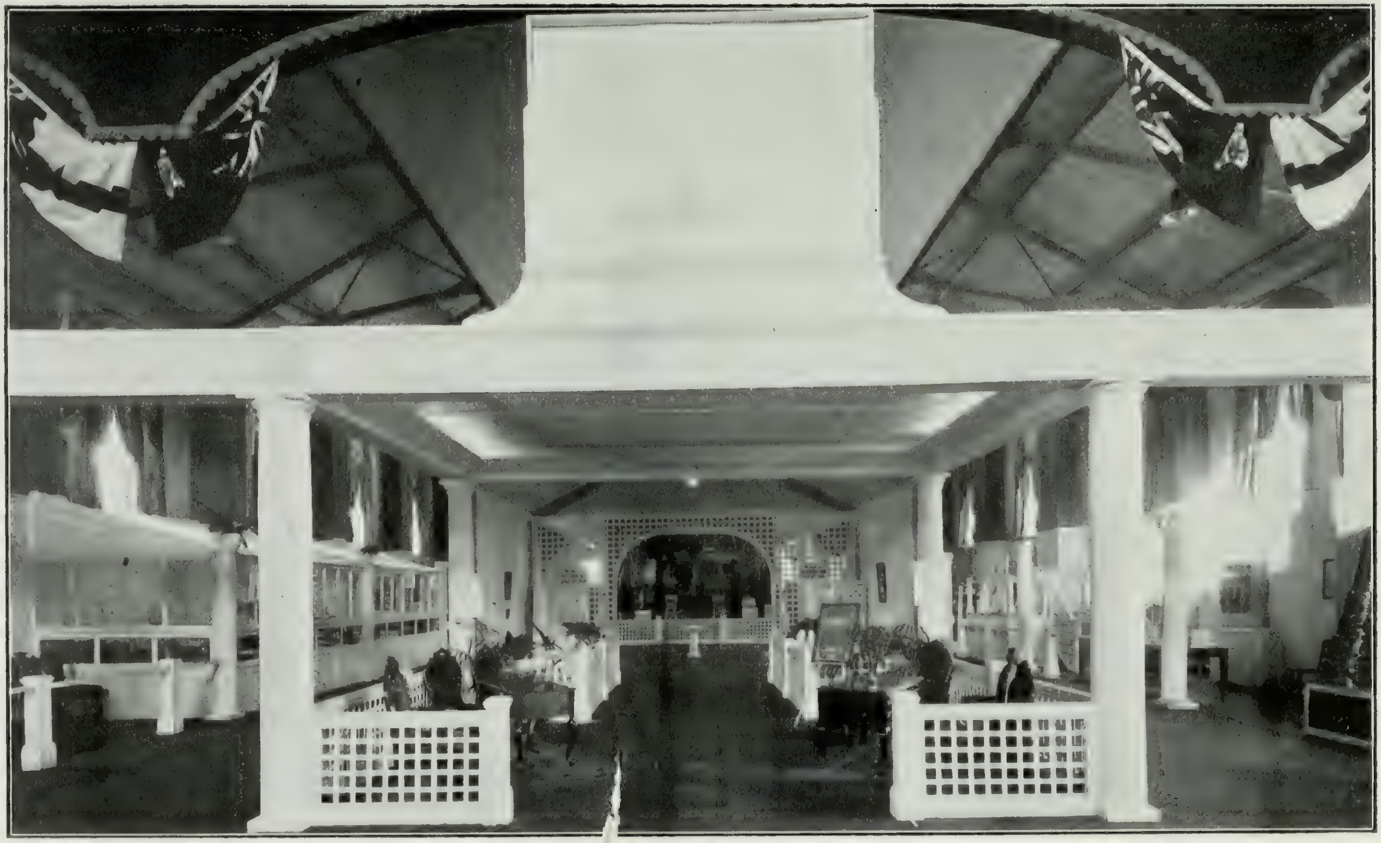
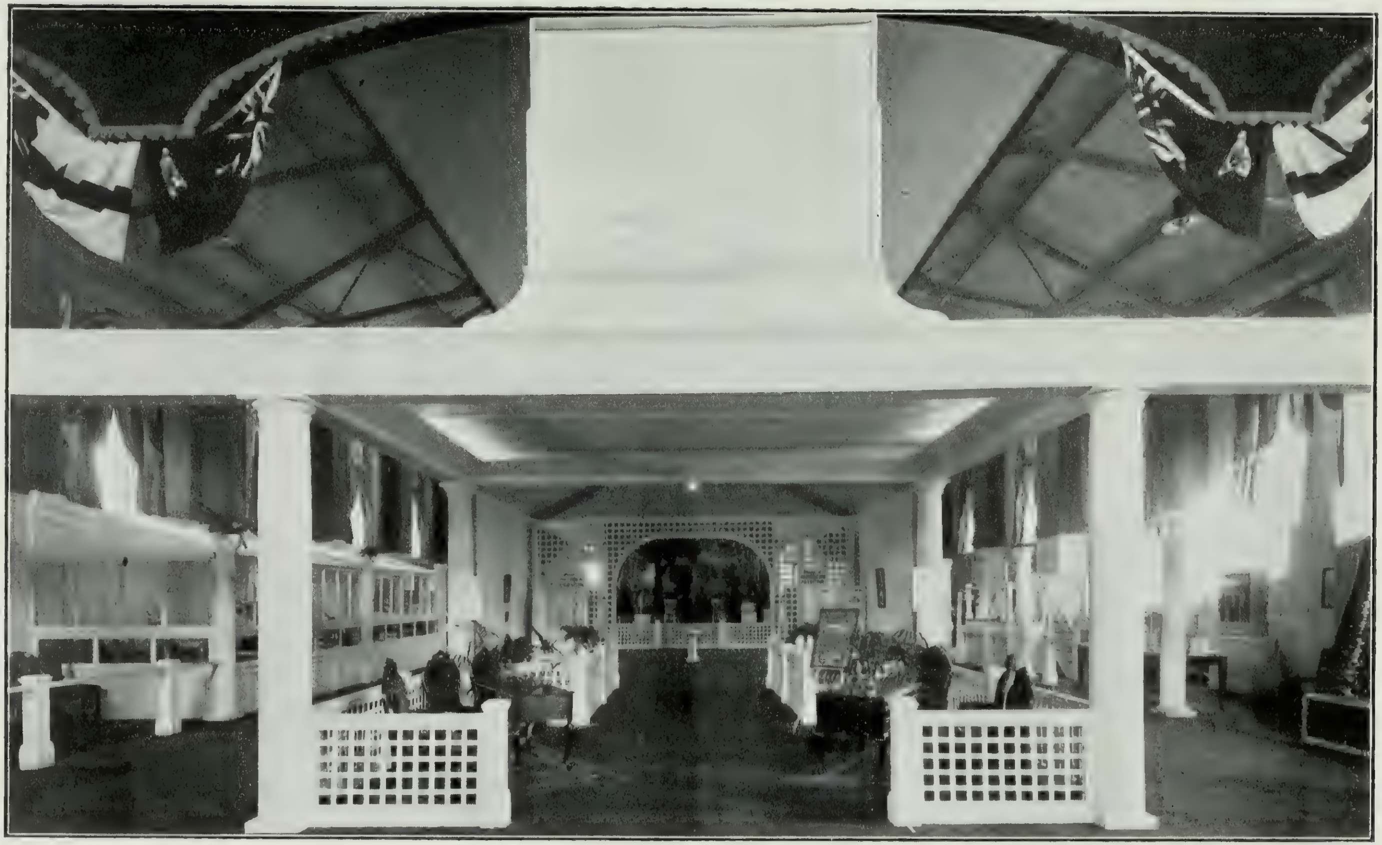
PARRY SOUND 74 5
CORNWALL 64 4
WALKERVILLE 57 8
LINDSAY 57 6
ORILLIA 45 1
WATERLOO 44 0
29 6
28 8
51 2
33 0
54 8
33 0
31 9
26 3
31 1
21 1
29 7
33 8
20 9
26 0
33 8
30 6
24 0
29 9
25 0
30 6
32 0
55 0
23 1
28 2
48 1
56 7
BIRTHS PER 1000 POPULATION



Canadian National Exhibition, 1921

"The Children's Theatre" Child Welfare Exhibit, 1921



Canadian National Exhibition, 1921

"The Children's Theatre" Child Welfare Exhibit, 1921

REPORT OF DIVISION MATERNAL AND CHILD WELFARE AND PUBLIC HEALTH NURSING

I have the honour to submit the Annual Report of the Division of Maternal and Child Welfare and Public Health Nursing, for the year 1921.

A detailed account by the Associate Director, Miss B. Knox, covers the work of the public health nurses in the eight Health Districts, together with results following demonstrations or other type of service given by the Division. It is very gratifying to note that nineteen local public health nurses have been appointed either by the municipal councils or local committees, while lack of funds has been the only reason for appointments not being made in seven additional centres.

During the year the activities of the Division have been carried on in twelve cities and twenty-two towns; work was done in farming sections in connection with demonstrations in the following: Manitoulin and St. Joseph's Islands and Townships of Niagara, Tecumseth, Prince, Korah and Tarentorus. Advantage was taken of the summer weather to make a survey of several sections in District No. VII, and special work was undertaken in the agricultural district surrounding Emo.

From this it will be seen that much has been accomplished during 1921 in the way of stimulating local effort to the point of action in employment of public health nurses. We feel, however, the more important aspect of our work has been the stressing of maternal and child hygiene, as part of the health education programme which the nurses have carried to the individuals and the families with which they have come in contact.

EXHIBITS

At the Canadian National Exhibition the Division contributed its share to the exhibit of the Board. The key-note of our work was "Child Health," no mention being made of disease or death rates. The educational aspect was given full emphasis; the interest centred around the stage, with its outdoor scenery, upon which the programme of the "Children's Theatre" was given at certain intervals. "Happy," the Health Clown, delighted the audiences with his "Act" and little Olive Russell added a novel touch in her recitations of health jingles. The "Mary Gay" plays were greatly enjoyed by the children. A "bottle of milk with a straw," distributed gratis to the boys and girls, was a feature of every afternoon, through the courtesy of the Ontario Milk and Cream Producers' Association.

Clinics were held daily by Dr. Bell, for which purpose the "Child Welfare Special" was used. Some of the children lived in Toronto, and many were visitors from out of town, while not a few took occasion to renew acquaintances begun at the Exhibition Clinic, two or even more years ago.

The Child Welfare Exhibit has been shown upon request in many other centres during the year and a detailed account of this work by Miss K. E. Osborne is appended.

CHILD WELFARE SPECIAL

The "Special" began its tour by a visit to Ontario County early in June. During the summer a definite schedule was followed and the communities along the main highway between North Bay and Toronto were visited. In September the "Special" was taken to Essex County and used in connection with a series of School Fairs; following which it was used in Niagara Township. A portion of Miss Osborne's report is devoted to the "Special."

CONFERENCES

The nurses were called to a general conference in the week immediately preceding the Annual Meeting of the Ontario Health Officers' Association in May, and again in November. This afforded to the District Officers of Health, Public Health Nurses and head office staff, an opportunity to meet together; it has been appreciated by each of the several groups and has proved of real value in discussing the various problems affecting the work of the Division.

CONVENTIONS

The Division has a firm belief in the educative value of conventions and has made an earnest effort to divide the opportunities for meeting workers in the child hygiene field among the staff, sending members as delegates to the annual meetings of representative organizations as follows:

Canadian National Association Trained Nurses: Misses Knox, Foy, Osborne.

Graduate Nurses' Association, Ontario: Misses Knox, Foy, Smith and Hamilton.

Ontario Health Officers' Association: Staff.

Canadian Public Health Association: Staff.

Canadian National Child Welfare Association: Miss Power, Miss Gipson.

American Child Hygiene Association: Dr. W. J. Bell, Misses Linton and Carr-Harris.

American Public Health Association: Misses Knox and Foy.

CONCLUSION

The thanks of the Division are hereby tendered to the Ontario Division of the Canadian Red Cross Society for their splendid contribution to the cause of public health in the Province, by supplying and maintaining eight public health nurses for a period of fifteen months. The results outlined in that portion of the report pertaining to public health nursing service, were made possible by their timely assistance whereby we are enabled to place two nurses instead of one in each of the respective health districts.

To the District Officers of Health we feel we owe a great debt of gratitude for the generous support they have extended to the Division since reorganization, and particularly for the assistance given the nurses on the field, which has been evidenced in many ways.

We wish it were within our power to pay an adequate tribute to the splendid corps of women who form the nursing staff of the Division. Monetary return can never compensate for sacrifices made by them in the spirit of a missionary and pioneer. The improved health of individuals and communities, the gratitude of mothers and the children whose lives they have helped to preserve, will be to them a "monument more lasting than brass."

We desire also to express appreciation of the office staff who have on all occasions maintained their high standard of faithful and efficient service.

MARY POWER.

REPORT OF THE ASSOCIATE DIRECTOR.

June of last year saw the beginning of a new life for the Division of Maternal and Child Welfare and Public Health Nursing. It was after careful study and consideration of the problems that were constantly increasing throughout the Province, that the Provincial Board of Health decided it was imperative to include Public Health Nursing in its already extensive programme for the fight against disease, and to increase its efforts to maintain the health of the people, giving special attention to the mother and child. This, it was agreed, could best be accomplished by an intensive system of Public Health Nursing.

The problem was recognized and the treatment decided, but the most difficult part was yet to come, the selection and training of the nurses who would undertake this great responsibility. Public Health Nursing in Canada was merely in its infancy, and at that time there were no training centres giving a course such as would be necessary to equip the nurses for their work in the Province; consequently it devolved upon the Provincial Board of Health to arrange for such a course. (For details see Annual Report, 1920).

Following this course, two nurses were appointed to each of the eight Health Districts. Eight nurses were appointed by the Board and eight additional nurses were supplied by the Ontario Division of the Red Cross. These nurses were to all intents and purposes members of the Provincial Staff, but the maintenance and salary was paid by the Red Cross.

The activities of the Division are:

- Pre-natal
- Post-natal
- Infant
- Pre-school
- School
- Communicable disease, including tuberculosis
- Bedside Nursing
    - In epidemics.
    - In emergency
    - Nursing instruction—Bedside care is given to instruct those in the home to care for the patient under the supervision of the nurse.

The duty of a Provincial Public Health Nurse is to demonstrate the need for a public health nurse in any community, by

(1) Teaching health in the
    Homes
    Clinics
    Schools
(2) Discovering symptoms of disease and physical defect.
(3) Reporting communicable disease.
(4) Reporting unsanitary conditions.
(5) Endeavouring to bring to the attention of the municipal authorities the findings brought forward by the demonstration.

Between October, 1920, and December, 1921, the Provincial Nurses undertook work at the following points.

Woodstock	Following the demonstration a second Victorian Order nurse was appointed.
Ingersoll	Nurse appointed, June, 1921. Lack of funds prevented the municipality from undertaking the responsibility of the nurse's salary. A committee of men and women agreed to carry the work in the meantime. The work includes the schools.
Chatham	Nurse employed, August, 1921, by the local Red Cross Society, but later lack of funds prevented the continuance of the service.
St. Thomas	Nurse employed, September, 1921 by the local Red Cross, but service later discontinued.
Galt	Permanent nurse appointed by the local Board of Health, November, 1920.
Guelph	Local Red Cross proposed to appoint a nurse but owing to lack of co-operation from the council and lack of funds found the proposition impossible.
Owen Sound	Permanent nurse employed, May, 1921, under the Local Board of Health. Venereal disease included in the work.
St. Marys	Permanent nurse employed under the Local Board of Health, July, 1921. Includes school work.
Walkerton	No appointment made.
Kitchener	Permanent nurse appointed under the Local Board of Health, August, 1921.
Stratford	Permanent nurse appointed under the Local Board of Health, September, 1921.
Collingwood	Permanent nurse employed, October, 1921, under the Local Board of Health. Includes school work.
Newmarket	Nurse apointed March, 1921, under the Local Board of Health, but service discontinued after three months owing to lack of funds.
Dundas	Second Victorian Order Nurse appointed.
Niagara Township	No appointment made.
Niagara Falls	Nurse appointed under the Local Board of Health. July 1, 1921.
St. Catharines	Local Board of Health had previously appointed a permanent public health nurse but child welfare clinics had not been organized. Upon request, our nurse assisted in the establishment of this service.
Welland	Nurse appointed under the Local Board of Health. June 1, 1921.
Thorold	Permanent nurse employed under the Local Board of Health. Four industries are included in the scheme.
Barrie	Nurse appointed under Local Committee, August, 1921, but later the service was discontinued owing to lack of funds.
Orillia	Nurse appointed under Local Committee, March 1. 1921.
Beeton and Township Tottenham and Alliston	No appointment made owing to lack of funds.

Peterborough	Survey of Health Activities.
Rockland	No appointment made owing to lack of funds.
Smith's Falls.	No appointment made.
Timmins	Permanent nurse appointed under the Local Board of Health, January, 1921.
Sturgeon Falls	Permanent nurse appointed under the Local Board of Health, September, 1921.
Sudbury	Nurse employed by local Committee, but service discontinued later.
Kenora	No appointment made. Lack of funds.
Emo and District	Special work during summer.
Surveys of:—	Jack Fish Rossport Dorion Keewatin Oxdrift Dryden. Dyment Sioux Lookout Ignace Jellicoe Rainy River
Sault Ste. Marie	Local Board of Health had previously appointed a permanent public health nurse but child welfare clinics had not been organized. Upon request, our nurse assisted in the establishment of this service.
Thessalon	No appointment made owing to lack of funds.
Webbwood	
Blind River	Permanent nurse appointed under the local Board of Health, October, 1921.
Manitoulin Island	
St. Joseph's Island	
Survey.	Algoma Central Railway, Sault Ste. Marie, to Hearst, Tps. Prince, Korah and Tarentorus.

SUMMARY

Some idea of the work accomplished during this time is gained through the following summary.

Total visits	25,389
Organization	8,907
Instructive	14,970
Nursing	1,512
Total Cases	11,552
Pre-natal	767
Post-natal	430
Infant	3,827
Pre-school	2,541
School age	2,222
Medical Adult	710
" Child	696
Surgical Adult	174
" Child	205
Meetings attended	380
Pre-school clinics held: 390, with an attendance of	6,004

(Routine procedure in the holding of Child Welfare Clinics is that Dr. W. J. Bell conducts the first clinic in each centre of demonstration upon request and with co-operation of the local physicians.)

Schools. In the summary given below each Health District is represented by figures from a selected centre in which school work formed part of the nurse's demonstration programme. The nurse undertakes inspection of the school children only upon request of the local school board.

School Findings	I	II	III	IV	V	VI	VII	VIII	Total
No. of Complete Physical Examinations	73	542	601	198	38			291	1,743
No. with defective vision	55	110	1	81					247
" defective hearing	17	19	114	11					161
" eye disease	14								14
" ear disease	3	4	23	2	5				37
" defective nasal breathing	97	23		4	4				128
" abnormal tonsils	267	163	199	23	19	212	140	56	1,079
" anæmic appearance	58	17	1	75					151
" defective teeth	381	316	551	2	14	325	206	179	1,974
" digestive abnormality				3					3
" enlarged glands	229	16	34	12	16			10	317
" skin disease	5		2		4	22	21	4	58
" orthopedic defect	3		3	4				1	11
" malnutrition	133		145	49					327
" pulmonary disease			3						3
" cardiac disease			6	18	2			1	27
" nervous disorders			4	5					9
	1,262	668	1,086	289	64	559	367	257	4,546
SUMMARY									
No. examined by doctor	73	542	601	198	38			291	1,743
No. defects found	253	668	1,086	275	64			251	2,597
No. inspected by nurse	545			24		699	1,397		2,665
No. suspected defects noted	1,009			14		559	367		1,949
Class Room Talks		14		6			43		63
Visits following Inspections		274		26		290	78	145	813
Referred to Physician		454		125					579
Defects Corrected	20	141		5					166

In conclusion I may say that the splendid co-operation of the staff, their devotion to duty under conditions and surroundings (which are to say the least, unenviable in many instances) and their loyalty to the Division has made the work, with its results, possible during the year. Too much cannot be said regarding the work of the Ontario Provincial Board of Health Nurses who are doing such efficient work, not only in the cities and towns, but in the remote rural districts where the inhabitants are so isolated that they have never been more than five miles from home. The hardships which are their daily portion are met with determination and steadfast purpose to carry their message of health to every part of the Province of Ontario.

B. Knox.

REPORT OF NURSE IN CHARGE OF CLINICS AND EXHIBITS.

The organization of the Division included an appointment to cover Exhibit and Special Demonstration work.

Clinics combined with Exhibits were held in the following places:

Preston—In May, 1920, upon the request of the local Victorian Order of Nurses, we went to Preston with a small Child Welfare Exhibit, which was set up in the local theatre. Our Moving Pictures were a feature. We are glad to report that following our visit regular Well Baby Clinics were established.

London—Once again the Division was glad to meet the request of the Child Welfare Association in the celebration of their annual Baby Week in May.

North Bay—In June, under the auspices of the Local Council of Women an Exhibit and Clinics were held in the Town Hall at North Bay. Three successful clinics were made possible by the generous assistance given by the local doctors and dentists.

The advertising and canvassing were done by the ladies of the Council, who were also responsible for supplying volunteers for the clerical work in connection with the clinics.

On two evenings Health Pictures were shown to interested audiences.

The splendid organization and the real interest shown augurs well for the future of child welfare work in North Bay.

Sudbury—A Child Welfare Clinic and Exhibit was held in Sudbury in the Town Hall under the auspices of the Local Council of Women.

With the kind assistance of Dr. W. E. George and voluntary helpers many mothers were given an opportunity to have their children weighed, measured and examined.

Moving pictures on health subjects were shown to about 1,200 school children.

St. Catharines—An Exhibit was held in the Y.M.C.A. Hall in St. Catharines, under the auspices of the Local Council of Women.

Woodstock—In September the Local Council of Women of Woodstock invited the Division to bring their Exhibit and conduct a three-day clinic to be held in Grey Memorial Hall.

All babies were weighed, measured and examined and on the third day prizes were awarded.

The medical profession of Woodstock were very interested in the work and helped materially in making it a success.

The clinics were presided over as follows:

First day—Dr. D. McIlwraith, Hamilton.

Second day—Drs. W. J. Tillman and J. C. Lindsay, London.

Third day—Dr. Alan Brown, Toronto.

Of special interest on the programme were addresses on Pre-natal Care by Dr. H. W. Hill, London, and on Child Hygiene by Dr. Alan Brown, Toronto.

Beeton—In December, a Child Welfare Exhibit and Clinic was held in Beeton under the auspices of the Women's Institute, following a talk given to them on the work of the Division.

In spite of December snow the clinic was well attended.

In the evening moving pictures on health subjects were shown to an interested audience.

Windsor—During the week of the Pure Food and Electric Show in Windsor, an exhibit covering Public Health in general was shown.

Burlington. In January, 1921, exhibit and moving pictures were taken to Burlington upon request of the local Board of V.O.N. to assist in the opening of their first Child Welfare Clinic. Dr. Mullin and Dr Clark, of Hamilton, were present and addressed the mothers.

Sulphide—In August we went to Sulphide, upon the request of the Community Nurse. Excellent work is being done, and although the programme is generalized Public Health Nursing, Child Hygiene has been given due attention and a very high standard is being maintained.

The number of children brought by the parents for examination was 88.

Lucknow—In October the exhibit was taken to Lucknow, upon the request of the local Women's Institute.

Demonstration of bathing and dressing a baby was given to the many interested mothers who attended.

Pembroke—One of the outstanding features of our exhibit work this year was the Health Week held in November under the auspices of the local Council of Women.

In the splendid room provided by the Committee, the exhibit was shown to the very best advantage.

This Health Week presented many features of special interest from an educational viewpoint, and an earnest endeavor was made to reach all classes in the Community. A demonstration of bathing and dressing a baby was given to a class of young girls. The pupil nurses of both hospitals were given an address on pre-natal care by Dr. Bell. Our moving pictures on Health Subjects were also a feature.

"CHILD WELFARE SPECIAL."

In June, 1921, the "Child Welfare Special" made its first tour in the Province.

In general, the plan was to bring the Child Welfare Conference to the mothers and children in the country districts.

The schedule followed is listed below, together with the result of the examinations:

	Children Examined.	Number Defects Found.
Port Perry	5	14
Brooklin	26	67
Powassan	24	56
Trout Creek	16	40
South River	19	52
Sundridge	16	56
Burk's Falls	16	53
Bracebridge	3	14
Gravenhurst	30	41
Severn Bridge	9	29
Atherly	7	22
Huntsville	17	48
Beaverton	6	19
Queensville	16	16
Aurora	16	15
Thornhill	11	19
Stouffville	23	40
Claremont	21	47
Uxbridge	34	48

"CHILD WELFARE SPECIAL"

The "Special" was also used at the Toronto Exhibition for clinic purposes, and then taken to the following Essex County School Fairs:

	Children Examined.	Number Defects Found.
Harrow	16	16
Malden	24	17
Gesto	14	25
Essex	29	44
Cottam	19	25

At the request of the Provincial Public Health Nurse in Niagara Peninsula, the "Special" visited that District, and Clinics were held as follows:

	Children Examined.	Number Defects Found.
St. David's	17	21
Niagara-on-the-Lake	20	23
Queenston	13	10

Respectfully submitted.

KATHERINE E. OSBORNE, *R.N.*

MATERNAL MORTALITY.*

W. J. Bell, M.B.

The subject of Maternal Mortality has in the past received a great deal of attention, but in spite of the fact that much has been written on the subject and frequent discussions have taken place as to its causes, our rates do not show the decrease we should like to see. On the other hand they show, if any change, a slight increase. Those of you who have had occasion to investigate statistics of Maternal Mortality know that under the present system of registration it is extremely difficult to obtain these figures; further, that even when the figures are obtained, a considerable error occurs owing to the fact that some physicians prefer to report a death as due to almost any other cause rather than puerperal sepsis or one of the other causes of Maternal Mortality. On our request, the Deputy Registrar General of the Province of Ontario is this year instituting a questionnaire to be submitted to physicians, dealing with the death of every female between the ages of sixteen and forty-nine, to obtain information as to whether pregnancy or parturition was the direct or a contributory cause of the woman's death. This information is to be compiled by itself, so that at the end of the year 1922, we will have much more accurate and detailed information than we have hitherto been in possession of, and this information will be in a condensed and compact form which will permit of a statistical analysis should such be desired. When we consider the subject of maternal mortality alone, we leave out a very important and very closely allied subject, that of maternal morbidity. A considerable number of women escape the mortality list but find a place in the morbidity list.

A prominent gynaecologist has told me that the major portion of the work of the specialist in his line was due to disability following parturition, and the writer of this paper desires that any discussion of maternal mortality which may follow its reading will include, not only maternal mortality but its near neighbor, maternal morbidity. Some of the causes of the two results are identical, so that a part of the discussion of one condition may embody both.

A statistical table is submitted with this paper. It has been compiled for me by the Deputy Registrar General, in which the causes of maternal deaths are grouped according to the international list of the causes of death. The information given in the table is not sufficiently specific to permit of a detailed analysis, but it does show that puerperal septicaemia is still the big factor as a cause of maternal mortality. Out of 489 maternal deaths in the Province, for the year 1920, 154 were due to puerperal septicaemia. The statistics for the Province of Ontario for the ten years—1911 to 1920—inclusive, show a proportion of 6.91 per thousand live births, the highest, occurring in 1912 to 4.52 per thousand live births, the lowest, occurring in 1919, the rate in 1920 going up to 6.75 per thousand. Comparing our Ontario rates for total maternal mortality, with those of England and Wales for the same period we find that the rate in England and Wales is considerably lower, and that it varies less from year to year than does our rate. Their lowest rate occurred in 1918, and it was 3.55 per thousand live births. Their highest rate was in 1919 when the rate was 4.12 per thousand live births. The maternal mortality rate due to sepsis in England and Wales has exceeded ours only once in the past ten years, namely in the year 1919, when their rate for fatal sepsis was 1.76 per thousand live births, as against our rate for that year

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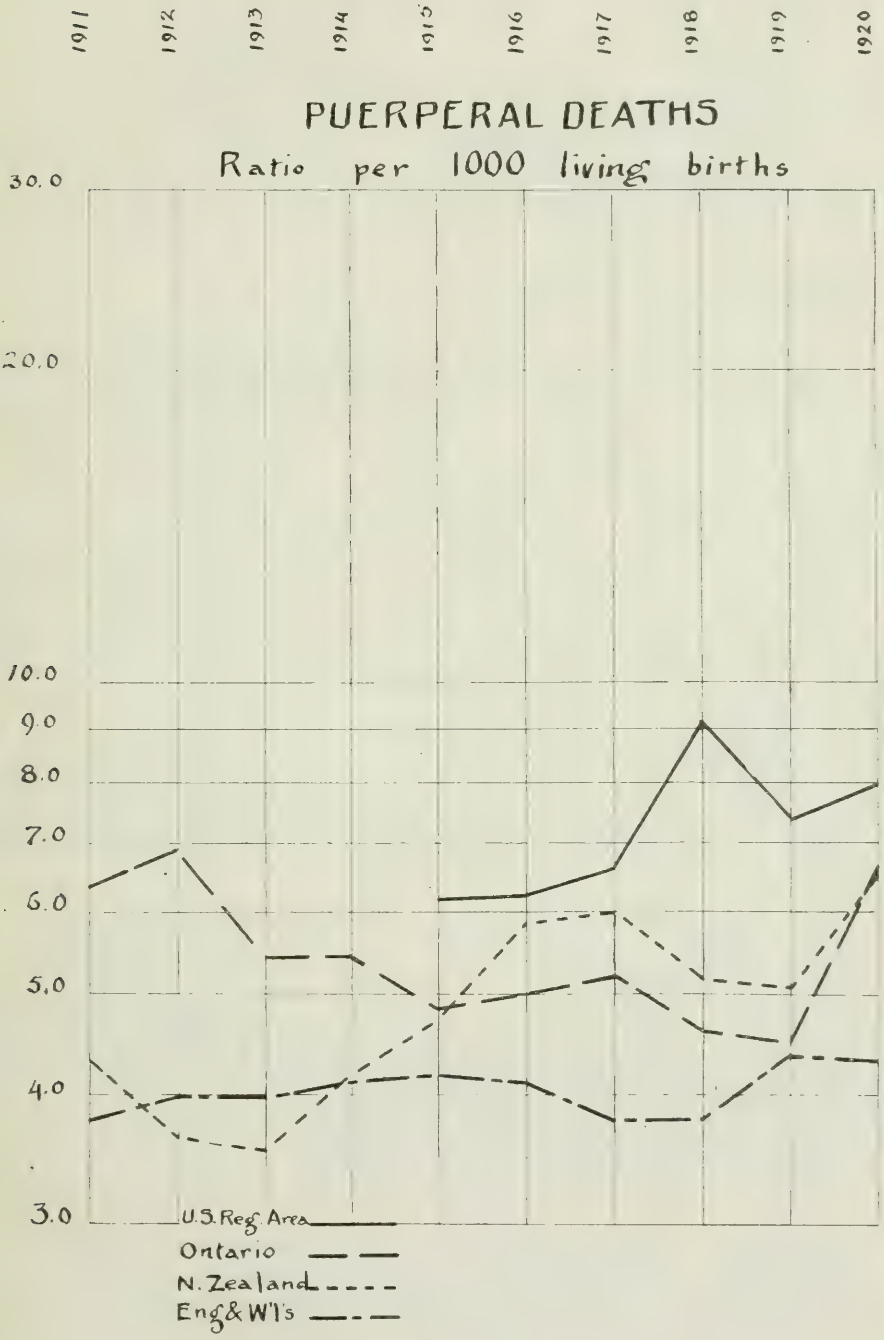
*Read at Annual Meeting, American Child Hygiene Association.


1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
PUERPERAL DEATHS
Ratio per 1000 living births
30.0
20.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
U.S. Reg. Area
Ontario
N. Zealand
Eng & W'l's

of 1.35 per thousand live births. Over the ten year period their rates for fatal sepsis have been from five-eighths to seven-eighths of our rates for the corresponding years.

When we remember that England has a midwife problem to deal with, we must conclude that it is necessary to look beyond obstetrical attention alone, as the chief cause of maternal mortality and fatal sepsis in maternity cases. Taking Ontario as a whole, albuminuria has been the factor second in importance only to sepsis as a cause of maternal mortality. The rate has shown a steady increase from 1911 to 1920, when it reached the large figure of 122, accounting for almost exactly 25% of maternal deaths for that year. In the City of Toronto, on the other hand, only 14 deaths out of 104 were accounted for by albuminuria. This last statement is significant and will be referred to later.

A specific analysis of the causes of maternal deaths for the year 1920, could be conveniently prepared for only one municipality and one public institution in Ontario, namely the City of Toronto and the Toronto General Hospital, the statistics for the latter being embodied in the former. In the City of Toronto during the year 1920, 104 maternal deaths from all causes occurred. Of these fifty were due to septicaemia—14 to albuminuria—9 to puerperal phlegmasia—18 to haemorrhage—2 to pernicious vomiting—4 to ectopic gestation—3 parturition, accompanied with cardiac complication—2 rupture of the uterus—6 placenta praevia (included in haemorrhage)—2 other accidents of labor. At the Toronto General Hospital 9 deaths occurred from influenza in pregnant women—1 from erysipelas in a pregnant woman, the erysipelas being the primary cause of death—1 from pulmonary tuberculosis in a pregnant woman—3 from eclampsia—2 from rupture of the uterus—1 from placenta praevia—1 from pulmonary embolus—1 from parturition with cardiac complication—1 from post-partum haemorrhage—4 from septicaemia.

I have to state just one more statistical point, viz: In the city of Toronto in the year 1920 there were altogether 13,661 living births. During the same year there were 104 maternal deaths—an average of 7.61 per thousand living births, almost 13% higher than the rate for the province as a whole. I will leave this point for your own consideration and deduction.

A study of the statistics I have summarized shows two points:—

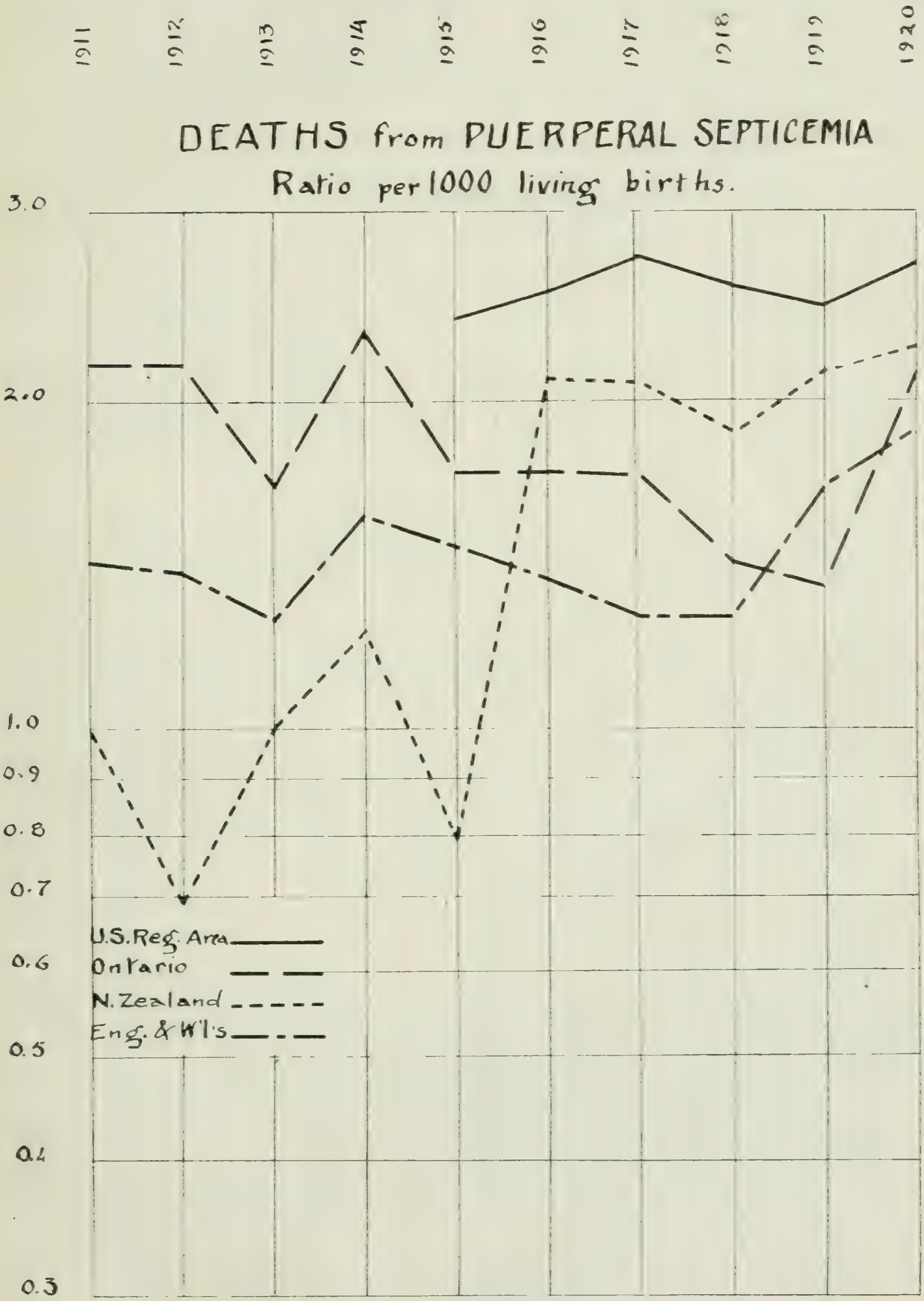
(1) The problem of maternal mortality is a large and serious problem.

(2) It is not being solved.

It would seem that the methods we have been pursuing for years past are not sufficient, that in spite of extensive research and the development of modern methods, we are not progressing, and that more intensive work yet, remains to be done before our maternal death rate will be lowered. One thing seems certain—a large percentage of our mortality amongst pregnant and parturient women is preventable, especially that due to sepsis and albuminuria. Intensive work along these lines would assuredly reduce the high figures that have prevailed for years past.

In attacking this problem the first matter for consideration is the personnel involved, consisting of the profession and the public, and with the profession I would also include the nurse, trained and fully qualified, or practical.

To the public the function of reproduction and parturition is an old story. It is common to the whole animal kingdom. It has gone on along certain lines since time was, and from time to time assistance has been given women in labor, but the public as a whole are grossly ignorant of the dangers incident to preg-



DEATHS from PUERPERAL SEPTICEMIA
Ratio per 1000 living births.

nancy and parturition. Many a person will converse fairly intelligently on such subjects as small-pox, anthrax, contaminated water and typhoid fever and yet know practically nothing of the serious conditions with which this paper attempts to deal. The attitude of the public appears to be that this physical function has been exercised for many years and that it is usually attended without mishap. It is, and has been an attitude of "laissez faire" and this must be the main point of attack in dealing with the problem.

It is not the intention of the writer to criticize the obstetrical work of the physicians further than to state that bad obstetrical work is occasionally the result of an attempt on the part of the obstetrician to direct nature, rather than to assist her efforts in the delivery. The main body of the physicians in our province are conscientious men who realize the responsibility they assume in undertaking a midwifery case, and who conduct a labor with every care possible. There is still and possibly always will be the careless man whose hands are unclean, whose instruments are unclean, and who is careless in his methods and in his technique. The doctor of this type will soon be relegated to his proper place by the public, who are now being informed as to reasonable maternal care, and the man who aims to exercise the necessary precautions will be appreciated accordingly.

In this connection, I should like to read you a letter received by Dr. McCullough, Chief Officer of Health, on Tuesday of this week. It reads as follows:

Dear Sir,

I came on a paragraph in "Social Welfare" recently which stated that 2,000 mothers die annually in Canada on account of child-birth, of which deaths *90% are preventable*, and was shocked to think of such waste in this civilized age.

This brought to mind the loss of two mothers in our Township during 1921:

(1) B.K.F., aged 36 years, and mother of two children, gave birth to a stillborn infant on December 8th, 1920.

On January 3rd, 1921, she died after great suffering. The cause of death given on the doctor's certificate was:

Primary. "Sepsis and Phlebitis."

Contributory. "Pulmonary Thrombosis."

It may be argued that this woman did not have competent care during her illness, but a friend of mine who was present at the birth told me that the doctor *was not careful* to cleanse his hands or sterilize his instruments in the thorough manner any other doctor she had seen at work on such an occasion would do.

(2) A.M., nearly 41 years of age, the mother of three or four children, was attended by the same doctor as Mrs. F. Mrs. M's death, which occurred November 24th last, was given as due to the following cause:

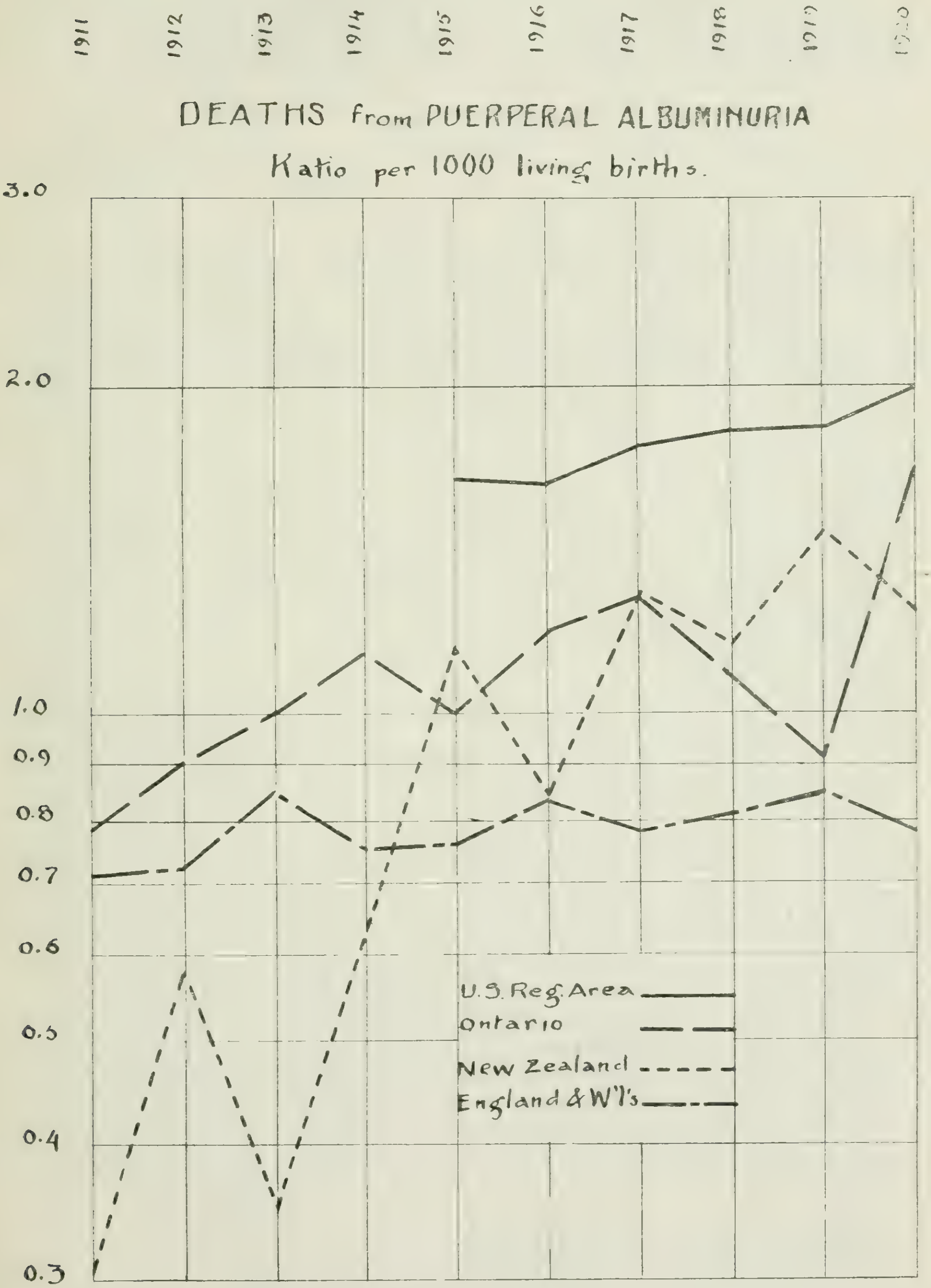
Primary. "Abortion caused by fall with subsequent Toxaemia."

Length of illness—"18 days."

Contributory. "Pulmonary Congestion."

Did an operation precede death? "Yes, November 1st, 1921. Curettage."

I do not understand these medical terms but know that intelligent neighbors of this woman were indignant at her death—so resolved to bring the matter to your attention.


1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
DEATHS from PUERPERAL ALBUMINURIA
Ratio per 1000 living births.
3.0
2.0
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
U.S. Reg. Area
Ontario
New Zealand
England & W'l's

I do not know what the law would do in such cases, but know the bereaved husbands are too busy caring for their little children to inquire into it.

Is there no law compelling a medical practitioner to be *clean* and to *sterilize* everything properly—yes, and instruct the attendants exactly what to do along these lines—or can he go blundering on until public opinion wrests his practice from him?

Sincerely yours,

M.A.F., (*Township Clerk*).

At an earlier point in this paper, I referred to the comparatively low maternal death rate of England and Wales, to the high rate prevalent in Ontario which is showing no tendency to decrease, and to the still higher rate for the City of Toronto. England has a midwife problem, the majority of the obstetrical cases in that country being attended by these women. Recently, however, the English midwife has been given a course of training and is obliged by law to maintain a certain standard of proficiency and to refer cases presenting complications to an obstetrician. Further than this, in England they have a very extensive system of health education, and this I submit is the chief reason for their lower mortality rate. In Toronto and in the Province of Ontario, there is inaugurated a system of health education through public health nurses, which must eventually result in a lowering of our maternal death rate. In the province we have at present, working under the Maternal and Child Welfare Division of the Provincial Board of Health, sixteen nurses who are located in various centres where they remain for periods varying from two to six months. During this time they endeavor to demonstrate to the community the value of the service of a public health nurse, and to have the municipality establish a permanent community nurse at the expiration of the demonstration by the departmental nurse. During the demonstration the nurses give instruction in practically every branch of public health, but especially do they stress the teaching of maternal and child-welfare. They teach pregnant women that slight bleeding during pregnancy should be investigated, that headache is a danger signal not to be neglected, that swelling of the feet, hands and eyelids is a matter of concern, that cleanliness is of extreme importance in preparing for the labor, during the labor and in the after treatment, and that in every case the pregnant woman should select her medical attendant early, should keep closely in touch with him throughout, and should carry out his instructions to the letter for her own benefit.

When we get this teaching instilled into the public we will have fewer cases of septicaemia, with a consequent marked lowering of our maternal mortality. This practical system of health education of the public must appeal to all present as striking at the fundamental cause of our high death rate in pregnant and parturient women, and on its extension we feel the province must place the greatest dependence for a reduction to the irreducible minimum in this connection.

There are other points which are debatable but which might be submitted for your consideration in this connection.

(1) At the present time the Mothers' Allowances Board gives no aid in maternal cases. They do give aid to foster mothers, to mothers deserted for five years, to those with insane or incapacited husbands and to a widow with children. Does this meeting agree with me that the authority of the Mothers' Allowances

Board should be increased, that they might, after reasonable investigation, have the right to extend aid to deserving maternal cases, and thus relieve the parturient woman temporarily at any rate, of financial worry?

(2) Does this meeting consider that there should be an enforced period of rest for two weeks before labor is expected and for four weeks after it has taken place, and how would it suggest such enforcement being carried out?

(3) Is it the opinion of this meeting that for work in the outposts of our province pre-natal advice to pregnant women might be given in a series of pre-natal letters, which have been found valuable as used elsewhere, and that provision might be made for obstetrical cases in small municipal hospitals, such as are in existence in the Province of Saskatchewan?

I thank you for your consideration of this very imperfect presentation of a most important problem.

Note. **The writer desires to express thanks to Mr. S. J. Manchester, of the Registrar-General's Department for the preparation of charts and statistics used herein.**

STATEMENT OF BIOLOGICAL PRODUCTS

Distributed Free of Charge by the Provincial Board of Health, Ontario

November 1st, 1921, to October 31st, 1922

Month	Smallpox Vaccine points	Cost	Diphtheria Antitoxin Units	Cost	Diphtheria Antitoxin Syringes	Cost	Schick Outfits	Cost	Toxin Antitoxin	Cost	Anti-meningitis serum-vials	Cost	Intraspinal outfits	Cost	Tetanus Antitoxin Units	Cost	Tetanus Syringes
November	26,780	1071 20	64873M	9730 95	5,142	1028 40	30	4 50	4	1 66	76	76 00	21	9 15	746 000	223 80	31
December	20,465	818 60	43,276	6,491 40	3,129	625 80	....	......	....	.....	75	75 00	24	10 80	807,500	242 25	57
January	54,835	2,193 40	45,041	6,756 15	3,274	654 80	80	12 00	6	2 50	59	59 00	14	6 30	692,500	207 75	148
February	37,450	1,498 00	35,672	5350 80	1,886	377 20	9	1 35	83	12 39	120	120 00	25	11 25	611 500	183 45	54
March	12,505	500 20	25,146	3,771 90	1,691	338 20	63	9 45	....	.....	57	57 00	11	4 95	272,000	81 60	10
April	16,725	669 00	28,610	4,291 50	2,360	472 00	24	3 60	....	.....	48	48 00	17	7 65	458,000	137 40	69
May	10,340	413 60	18,477	2,771 55	1,509	301 80	....	......	....	.....	160	160 00	15	6 75	583,500	175 05	5
June	12,675	507 00	18,822	2,823 30	1,523	304 60	251	37 65	27	27 00	122	122 00	31	13 95	511,500	153 45	102
July	4,375	175 00	12,299	1,844 85	557	111 40	43	6 45	5	5 00	15	15 00	.....	.	515,500	154 65	26
August	6,450	258 00	28,078	4,211 70	2,279	455 80	86	12 90	15	15 00	59	59 00	1	45	413,000	123 90	67
September	8,230	329 20	23,586	3,537 90	991	198 20	45	6 75	1	1 00	56	56 00	9	4 05	690,000	207 00	14
October	5,725	229 00	46,109	6,916 35	1,396	279 20	49	7 35	24	3 36	98	98 00	23	10 35	413,000	123 90	5
	216,555	8,662 20	389,989	58,498 35	25,737	5,147 40	680	104 00	165	67 91	945	945 10	191	85 95	6,714,000	2,014 20	588

SUPPLY STATEMENT

Month	Cost	Tetanus Antitoxin outfits	Cost	Pasteur treatment for Rabies	Cost	Pertussis Vaccine		Silver nitrate solution	Typhoid vaccine cc.	Total cost.	Diphtheria Antitoxin Syringes	Intra-spinal outfits, Anti-Meningitis Serum	Tetanus Antitoxin Syringes	Tetanus Antitoxin Outfits	Total
						10cc.	25cc.								
November	6 20	2	90	2	30 00	357	60	181	985	12,183 06	1,028 40	9 45	6 20	90	1,044 95
December	11 40	......	......	......	......	311	65	384	1,410	8,275 25	625 80	10 80	11 40	......	648 00
January	29 60	1	45	......	......	277	58	111	522	9,921 95	654 80	6 30	29 60	45	691 15
February	10 80	3	1 35	......	......	201	37	267	445	7,566 59	377 20	11 25	10 80	1 35	400 60
March	2 00	1	45	......	......	187	21	123	300	4,765 75	338 20	4 95	2 00	45	345 60
April	13 80	1	45	......	......	116	18	246	210	5,643 40	472 00	7 65	13 80	45	493 90
May	1 00	4	1 80	......	......	460	39	439	2,540	3,831 55	301 80	6 75	1 00	1 80	311 35
June	20 40	1	45	2	30 00	317	37	223	870	4,039 80	304 60	13 95	20 40	45	339 40
July	5 20	1	45	3	45 00	193	49	437	2,067	2,363 00	111 40	......	5 20	45	117 05
August	13 40	2	90	1	15 00	159	39	310	3,612	5,166 05	455 80	45	13 40	90	470 55
September	2 80	7	3 15	......	......	256	9	7	1,382	4,345 95	198 20	4 05	2 80	3 15	208 20
October	1 00	2	90	......	......	341	37	637	2,885	7,669 41	279 20	10 35	1 00	90	291 45
	117 60	25	11 25	8	120 00	3,175	469	3,365	17,228	75,771 76	5,147 40	85 95	117 60	11 25	5,362 20

Total Cost	$75,771 76
Revenue	5,362 20
Net	$70,409 56

CASES AND DEATHS FROM COMMUNICABLE DISEASES

Reported Weekly by Local Boards of Health for the Year 1921

Date 1921	Smallpox		Scarlet Fever		Diphtheria		Measles		Whooping Cough		Typhoid		Tuberculosis		Infantile Paralysis		Cerebro-spinal Meningitis		Syphilis	Gonorrhea	Chancroid	Influenzal Pneumonia		Pneumonia
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Cases	Cases	Cases	Deaths	Deaths
January	902	3	613	17	876	63	595	9	396	9	43	13	166	114	3	3	2	2	195	245	12	34	18	271
February	867	5	622	15	565	59	395	8	257	17	37	10	194	147			12	12	240	221	8	53	17	374
March	526	1	436	16	447	47	238	4	237	19	30	11	181	134	...	6	9	5	211	157	10	78	42	315
April	383	2	365	7	409	34	284	0	165	16	32	5	196	121	...	...	7	6	219	236	1	90	30	250
May	533	1	386	11	434	32	516	8	228	15	38	8	224	130	3	2	10	7	261	252	6	31	19	181
June	170	2	289	6	371	20	390	2	194	7	29	5	220	105	.		9	9	112	155	3	2	2	126
July	104	1	101	3	285	19	223	3	227	7	41	18	165	121	3	0	4	1	159	201	1	2	2	114
August	24	...	114	3	264	28	50	....	151	6	152	27	213	139	23	3	3	1	114	175	5	2	2	83
September	48		171	5	294	25	14	...	150	10	120	31	175	115	17	1	8	8	226	166	1	35	4	98
October	16		384	15	685	56	16	3	129	7	100	30	176	118	21	1	1	4	271	256	1	10	5	129
November	76	.	513	12	940	82	36	1	78	9	72	21	207	117	10	1	6	5	256	287	2	14	14	169
December	128	.	600	16	743	60	94	2	95	9	28	5	171	139*	1	0	5	3	183	230	5	4	4	215
	3777	18	4564	126	6313	525	2851	40	2307	131	725	184	2286	1500	81	20	79	66	2477	2584	61	355	159	2325

*Only 73% of deaths reported.

ANNUAL REPORT FOR 1921 OF DISTRICT No. 1.

from,

T. J. McNally, D.P.H.,

District Officer of Health.

I have the honour to submit the following marginally noted report for this District which comprises the Counties of Lambton, Essex, Kent, Elgin, Oxford, and Middlesex, exclusive of the border municipalities and the City of London, these being over 50,000 population and under a full time Medical Officer of Health who is directly under the supervision of your Board.

In this District there are 115 organized municipalities composed of sixty-eight townships, twenty-six villages, seventeen towns and four cities, each with its own local Board of Health regularly constituted.

Public Health Nursing.

During the year intensive Maternal and Child Welfare work has been carried on in the cities of St. Thomas and Chatham, also in the towns of Ingersoll, Amherstburg, and Blenheim as well as in the township of Harwich by your Public Health nurses appointed to this District, and as a result a local Public Health nurse has been appointed in Ingersoll, St. Thomas and Chatham, being supported in each case partly by voluntary subscription and partly by municipal aid.

After the demonstration in Amherstburg an attempt was made to have a local Public Health nurse appointed to be partly supported by The Brunner Mond Corporation and partly by the municipality, but this did not receive the sanction of the Town Council, I am sorry to say.

In Blenheim the survey and demonstration of intensive work is being continued by your nurse, and at the same time she is introducing the work into the Township of Harwich; in both of these municipalities she has completed an examination of all the school children.

It is intended to make an effort to get these municipalities to unite for Public Health work by the appointment of a local Health Nurse, but I fear unless The Department of Health gives some financial assistance it will not be accomplished, as the councils in these smaller municipalities appear to think the expense too great to add to their present tax rate, although personally in favour of the work and appreciative of the benefits resulting therefrom, as already demonstrated.

In addition to the above work in this District, the Child's Welfare special was taken to as many as possible of the school fairs, in the County of Essex where your nurses and Dr. Bell conducted a clinic at each; and follow up work was carried out afterwards by the nurse.

This course was much appreciated by the people and the discussion it created has done much to arouse public interest in the work carried on by a Public Health nurse, so much so that the representative in charge of these fairs has requested that the same course be put on next year.

Canneries and Milk Products Factories:

There has been considerable improvement in the care of the effluents from these factories, but in several instances just complaint has been made, requiring several special trips to assist the local authorities in having conditions improved and the nuisances therefrom abated.

In an effort to formulate a uniform method of treatment for canning factory effluents the Provincial Sanitary Engineer, Mr F. A. Dallyn, Dr. Clinton, District Officer of Health for District No. 4, Dr. D. A. McClenahan, District Officer of Health for District No. 3 and the writer were appointed by the Chief Officer of Health to visit the Eastern factories of The Dominion Canners during the week of August 24th while they were in operation.

The result of our observations is being developed by the Engineering Division of the Public Health Department, which, we hope will result in a uniform method of treatment being approved, though from our observations of the different systems in operation, we concluded that the success of whatever method might be decided upon, would depend largely upon the efficiency of the local operator, more than upon the form of treatment decided on. In this research, the executive officers of the company gave us every possible assistance as well as personally conducting us to and through their several plants visited.

Milk Supplies:

In this District as the result of our efforts several municipalities have, during the year, passed milk by-laws so that now all the cities and most of the towns and larger villages have regular inspection of the milk supply made under the supervision of the local Board, but there is yet considerable to be done in this field before conditions are entirely satisfactory.

Meat Supplies:

There has been considerable progress made in the enforcement of the regulations concerning slaughter-houses and I hope during the incoming year to have all brought up to the standard set by your Board but, even then, constant supervision will be required to secure reasonable care in the preparation of local meat supplies.

Rural Schools:

Gradually, though slowly, through the co-operation of the School Inspectors, and the annual visitation and survey made by the local Medical Officers of Health, some improvement is being made in the sanitary conveniences at these schools as well as in their care and cleanliness.

In connection with our work along this line there is being evolved in the minds of trustees and parents a clearer conception of the causes of diseases and their routes of travel from the infected to contacts as may be noted in the provision of basins, soap and sanitary towelling in some schools for the use of pupils and teacher.

Proper heating and lighting is also receiving more consideration, and personal hygiene is being improved through short talks by the local officers to the pupils on the occasion of their visits to inspect the sanitary condition of the school and its surroundings.

Provision of pure and wholesome water supply for drinking purposes is being more generally made and protection from contamination looked after especially in regard to proper pumps and water tight covers for the wells. There is a marked exception to this noted in schools adjacent to the St. Clair river and lake, where in many of these the water for the pupils to drink is obtained from the contaminated river and lake and supplied without any attempt being made to purify it.

The trustees in several of these sections claim that it is impossible to obtain well water suitable for drinking purposes as they have repeatedly tried and failed.

Educational:

During the year I have by request given addresses on Public Health to several Women's Institute meetings and also to County school trustees' meetings, thus interesting those who are assisting in forming public opinion on matters of Sanitation and Hygienic living.

I have also taken up at three County medical society meetings the relationship between the general practitioner and the Department of Health.

In addition to the above efforts to bring about a more appreciative public attitude towards Public Health matters I have as frequently as possible met local Boards of Health and Councils as well as other public associations and discussed with them local as well as general Public Health questions.

Public Service Superannuation Board:

During the year I have been called upon to make two examinations and reports for this Board upon persons applying for superannuation.

Reports on Cemeteries:

In compliance with instructions from the Chief Officer of Health I made examination of, gathered information required and reported upon all cemeteries in the District, as far as possible for me to do in the time at my disposal. This entailed an immense amount of work and occupied about four months of the year; even at that I must confess the information obtained was not as complete as I would like to have given.

In many cases it was very difficult to learn who was responsible for their care or could supply dependable information.

As this subject has already been reported upon and is not actively connected with Public Health, further comment does not appear to be called for in this Report.

Communicable Diseases: Smallpox:

This disease has during the year appeared in several municipalities but in very mild form and so far as I am aware without any fatality resulting.

In most instances the local Medical Officer of Health successfully controlled the outbreak, though in seven municipalities I was called upon to assist the local authorities in suppressing the disease.

Scarlet Fever:

The local authorities have, in most instances where this disease appeared, successfully controlled the outbreak, confining it within comparatively narrow bounds. The type has been mild, hence frequently in its early incidence unreported or unrecognized. In one municipality I was called upon on four occasions to assist in its control, owing largely to disputed diagnosis, while in each of two other cases I had to make a special call to support the local authorities in its suppression. In no case did the disease assume the proportion of an epidemic.

Tuberculosis:

In reference to this disease I do not believe its incidence has been quite so common this year as for the past few years, though we have not regained the ground lost through stress of the Great War.

I am pleased to note that the Dominion Tuberculosis Association purpose inaugurating an extension service in connection with Sanitoria for the control and treatment of this disease along the line suggested in my report for 1920, providing sufficient funds are available. I sincerely hope the Dominion and Provincial Governments may see their way clear to give this undertaking the required financial assistance, since the scheme as outlined is well conceived and I am confident will, when developed, be a long forward step towards controlling this insidious disease.

Diphtheria:

The incidence and death rate from this disease is continuing entirely too high, largely I believe, due to failure in bringing cases early enough to the physician for treatment; hence the necessity of impressing upon the public the importance of consulting the family physician *at once* upon the appearance of any "sore throat" or "discharging" nose, as these latter too frequently are due to this disease and form a large proportion of the missed cases. Two municipalities called upon me for assistance in clearing up this disease.

Measles:

The type of this disease has been mild and its incidence rather less frequent this year than usual. Quarantine is now being better observed since the time has been reduced to two weeks.

Whooping Cough:

The isolation of patients suffering from this disease is not as rigidly enforced as appears desirable, though the severity of cases and its incidence are being materially lessened through the use of the vaccine given out by your Board.

Typhoid Fever:

The supervision of public water supplies together with treatment and control of sewage has practically eliminated epidemics of this disease, yet eternal vigilance is required by health authorities to prevent any relaxation of control by those responsible for the care of these works.

On August 14th, 1921, I was instructed by telegram by the Chief Officer of Health to investigate, assist in the control of, and report upon an epidemic of typhoid fever at the Ontario Hospital at London, which I did, and submitted the following report on August the 23rd.

Typhoid Outbreak: Ontario Hospital, London, Ont.

In compliance with instructions by wire, which reached me on the 14th (Sunday) instant I visited the marginally noted institution on that date and on enquiry from the doctor in charge (Dr. Kaiser) I learned that the first cases showing symptoms of typhoid occurred on or about the 29th of July, though these patients might have been ailing a few days before and the condition not be apparent owing to their mental condition (the first one quoted being a deaf mute imbecile).

Later investigation disclosed that as early as the 26th of July, patients in another building were affected and that for two weeks before that diarrhoea was fairly prevalent (so Dr. Robinson informed me), thus establishing the time of the pollution of the water supply and the source of the infection as being carried into the supply through the unusual and excessive rainfall of July the tenth.

The bacteriological examination of the water disclosed the presence of colon in 1/10cc and this continued even after the springs were cut off, thus revealing that the source was probably human as the well was found pure and the reservoirs and taps polluted: my conclusion on this first visit was that the infection or rather the pollution came from the septic tank which is but ten feet more or less from the water reservoir in the yard, and the analyses of the water show that the water gradually became pure and then suddenly reinfected.

It appeared to me that the reservoir in the yard was grossly polluted on the 10th by the rush of surface water swept over a bush covered area which was fouled.

I recommended on this visit that city water be used and the tanks cleaned out and thoroughly chlorinated: nothing had been done up to this time or any change made, except to cut off the spring supply.

Owing to other urgent duties I was unable to complete any further survey until the 18th instant, when I found the water was still being supplied through the tanks, some city water being added to the supply which repeated examinations proved to be polluted at the taps.

A commencement had been made towards clearing the tank in the yard by pumping the water out, but the water was passing through the reservoir under the machine shop without its having been purified or cleaned.

A further survey on this occasion revealed the fact that the water and sewage backed into the engine room raised to two feet above the overflow of the tank under the machine shop, thus fouling it and it was also found that the shut off between this tank and the one in the yard was defective, thus explaining the uniform impurity of the water in the reservoirs.

On this occasion I again recommended the use of city water as they could not use the well without using the tanks; the difficulty in using city water was that it did not give pressure enough to flush the third storey toilets, so I suggested that in the meantime these be flushed by pail. I understand this recommendation has been carried out and also the cleansing of the reservoirs, but the further recommendation that their water system be purified by passing chlorine in with the supply has not been followed and on enquiry at the Institute of Public Health to-day I learn that the water still shows colon bacilla in 10cc and one sample examined to-day gas developed in 1/10cc.

Another condition that I consider dangerous is that the pipe between their meter and supply passes through an area traversed by sewers and in this pipe the water is not under pressure, so that any seepage of sewage would likely find entrance to the water supply, if the water pipe were at all defective. I recommended that this pipe be cased in cement.

I am informed that it is intended to put down a new deep bored well just west of the present well; I consider this a dangerous procedure as the whole area is a network of sewers old and new and entirely unsafe as a source of water supply.

The present supply has so far during this outbreak been pure, the whole trouble being between the well and the distribution system, yet I consider the position of the supply a potentially dangerous one.

On both of my visits I advised that all persons in the Institution should be inoculated against typhoid (who had not already come down with the disease). I was informed on my first visit that all attendants had been advised to take this precaution but it was not compulsory and on my second visit Dr. Robinson said it was being carried out as rapidly as possible.

The first Widals made on the 29th of July were found to be negative and blood cultures of the same date were also negative.

Repeat Widals of these same cases on the 6th of August were positive. Up to the present time 103 Widals examinations have been made of which about 20 are repeats. There have been 53 found positive.

I should have explained that on my first visit Dr. Robinson was not on duty as it was his Sunday off and so it was not until Thursday that I had an opportunity to go over the situation with him personally.

In conclusion permit me to say that the most painful impression was made on me by the haphazard way in which the sewers, septic tank and water pipes were intermingled even the overflows entering a common drain. There is no general plan on file to assist in arriving at a positive opinion as to all sources of danger and in the present instance I have not so far arrived at a satisfactory explanation of why this supply apparently cleared up and then suddenly became quite as bad as in the first instance.

In this connection I recommend that a complete plan be prepared and kept on file and that this plan show not only the sewers and connections now in use but the location of those discarded as far as possible and that the plumbing be thoroughly gone over and a plan of this also kept: from my very casual observations there is much to be desired in regard to the plumbing.

I further recommend that when these plans are prepared the Department concerned have them gone over by expert sanitary engineers and the systems corrected where defective, and if I might be permitted to go further, that this recommendation should be applied to all such Public Institutions as the experience in this institution is too ghastly to have a repetition in some other institution; it seems to me quite apparent that the whole difficulty is that these systems and changes in the systems are installed without the supervision of trained experts in that line.

Regular Inspections:

In addition to the work already briefly reported upon, I made a regular visit of inspection to 113 Municipalities and carefully reviewed with the Local Medical Officer of Health the work done by the Local Board, indicating to him any condition where I considered improvement or extension of their duties might be made.

I was also called upon to make ten special trips to different Municipalities to abate nuisances, three in connection with Venereal Diseases, eight were required for supervision of Slaughter-houses, three for care of Public water supplies, five for control of sewage disposal, and four for correction of abuses in connection with garbage disposal.

I am pleased to report that the City of Chatham is about to install a modern incinerator for the disposal of their garbage.

Morbidity and Death Reports:

I regret to note that there is not any improvement in these reports, in fact they are neither complete nor promptly reported: as made and recorded at present they are not only misleading but practically of little if any use in epidemiological work and, as statistics, the conclusions drawn from them are of little scientific value.

I respectfully urge that such action be taken as in your judgement will lead to prompt and accurate reporting as Health Work, without accurate and prompt reports and statistics, is just as seriously handicapped as a business concern without proper and accurate book-keeping.

All of which is respectfully submitted for your consideration and action.

ANNUAL REPORT FOR 1921 OF DISTRICT No. 2.

Sir,—I have the honour to submit summary of the work done in the latter half of the year 1921.

On July 1st I took over the District from Dr. Wodehouse. In March, Simcoe County and Muskoka had been transferred from District No. 4 to District No. 2.

During part of July and August with Dr. Bell I inspected the summer resorts in Muskoka and Georgian Bay Districts. In all we visited 112 places as follows—Muskoka Lakes 54, Lake of Bays, etc., 34, Sparrow Lake 14, Georgian Bay 10. On the whole they were well conducted from a sanitary point of view. This is very important where there are so many thousands of visitors from all parts of Canada and the United States. But constant supervision is required to keep them up to standard. Many of the proprietors of boarding houses and hotels would get lax if they had not always the incentive of a visit from one of your inspectors. This is especially true of the larger places. By encouraging, warning and threatening much has been accomplished. One hotel only had to be warned that unless sanitary conditions were improved, they would not be allowed to open next year.

Special visits were made as follows, detailed reports of which have been sent to the Provincial Board.

July.—Dairies, Midland.

August.—Creamery, Logan Twp.; Garbage Dump, Utterson; Infantile Paralysis, Orillia.

September.—Tuberculosis, New Hamburg.

October.—Abattoirs, Kitchener; Smallpox, Palmerston; Diphtheria at Preston; Scabies, Listowel.

December.—Cattle Yards, Rockwood; Emmons family, Severn Bridge.

Water Supply.—The water supply in most places is good, with the exception of three towns, viz.: Goderich, Hanover and Kincardine. Goderich will have to extend their intake. Kincardine needs a filtration plant. Hanover requires both a water works and sewerage system. It is hoped these will be completed in the coming year.

Dairies.—An active campaign is being carried on to secure pure wholesome milk. The butter fat is well up to standard, but there is still dirty milk being sold. More care is needed at the source, that is at the producers'. Much can be done by education and publicity. Many towns publish the results of the examination for butter fat and for dirt, in the local papers. This has had a good result.

When we realize that dirty milk may be responsible for outbreaks of typhoid fever, scarlet fever, diphtheria, tuberculosis and septic sore throats, we see how necessary is a pure supply.

But more than this even is the importance of a pure milk supply in its relation to Child Welfare and the lowering of the Infant Mortality rate.

Slaughter Houses.—A great deal of work has been done in improving the slaughter houses. They are in fairly good condition throughout the District.

Child Welfare.—The great need in Public Health work to-day is education. The greatest factor in this education is the Public Health Nurse, who goes into the home and imparts knowledge at first hand.

Public Health Nurses are now established at eight places in this District—Galt, Owen Sound, St. Mary's, Kitchener, Stratford, Collingwood, Barrie and Orillia. Demonstrations have been put on at Guelph, Walkerton and Goderich. These places while in sympathy with the work, plead financial stringency as the reason for not engaging one. Midland has asked for a demonstration. Midland had the highest Infant Mortality rate in the Province shown by the latest report, and I firmly believe a Health Nurse could do a great deal in lowering this rate.

COMMUNICABLE DISEASES.

Smallpox.—This disease has not assumed the wide spread prevalence it did last year. I was called to see only one case, at Palmerston. Strict quarantine and vaccination were instituted and no other cases were reported. This lull in the disease should not lessen the importance and necessity of vaccination.

Scarlet Fever.—Has occurred in many localities but in a mild form. Nowhere has there been an epidemic.

Diphtheria.—Was very prevalent during November and December. One noticeable feature about it was that cases would occur in different parts of a town on the same day with apparently no connection. There must have been mild cases that did not present themselves for treatment. In all places vigorous search was made for carriers, which tend to spread the disease.

Measles and Whooping Cough.—Nowhere assumed epidemic form. Good reports are received of the vaccine supplied by the Provincial Board of Health for Whooping Cough.

Infantile Paralysis.—One Municipality asked for help in checking this disease, eleven cases had occured, no deaths. The Local Health Officer had all cases reported and quarantined and its spread checked.

Typhoid.—The only epidemic of Typhoid was at Hanover where there were fifty-six cases and two deaths. The cause was traced to the water supply and a new system has been ordered to be installed.

Tuberculosis.—There are scattered through the country certain foci of Tuberculosis. These are cases where the bread winner, usually with a large family, has contracted the disease. He does not wish to go to a sanitarium unless he has the assurance that his family will be provided for. These are unfortunate cases and it seems only right that the municipality should assume responsibility not only for the patient but for his family as well. District Nurses would help in these cases in showing the family how to live properly and how to prevent the spread of infection.

Branch Laboratory.—A branch of the Provincial Laboratory has been opened at Owen Sound, under the supervision of Dr. Murray Fraser. Although it has been in operation only two months, it has already been of great benefit to the northern part of the District. Examinations are made and antitoxins and serums distributed effecting a great saving of time which is so essential in cases requiring this work. A V.D. clinic is held in the same building, over sixty cases being under treatment to date.

An encouraging feature of Public Health work is the increasing interest being taken in the rural districts. This is due to and will continue to grow through the sanitary survey of the schools. The school is the natural place to instill ideas of hygiene and cleanliness. As the children go out from the school they will carry these lessons into the home. The District Officers are now able to reach the rural parts by car which tends to create interest leading to a desire for knowledge of what is being done in other places.

All of which is respectfully submitted.

J. J. Fraser,
District Officer of Health District No. 2.

ANNUAL REPORT FOR 1921 OF DISTRICT No. 3.

EPIDEMIOLOGY.

There were a large number of cases of infectious disease in my District during 1921. At the present time the work of the District Officers of Health seems to be largely taken up with the suppression of communicable disease. There are other phases of Public Health activity that some may think are more important viz: Child Welfare, the control of venereal disease and the fight against tuberculosis but, rightly or wrongly, infectious disease and its control looms large in the work of the average Health Officer. In the attempt to control infectious disease we meet difficulties and discouragement; mild cases, missed cases and carriers are often instrumental in the spread of disease. Isolation from which so much has been expected seems to fail particularly with regard to measles and scarlet fever. It is very important to recognize the initial case. Given a correct diagnosis in the first case of Smallpox in a community, I have repeatedly seen the disease confined solely to the house in which it originated. The mild cases of infectious disease are difficult to deal with. We have not yet gotten the public sufficiently educated so that they notify the Health Officers of a suspicion of some infection. We need that co-operation from the public. The missed cases are still harder to deal with as they are not recognized by anyone. The only time they are suspected to have occurred is when pronounced cases, which they have caused, break out. There is great need to seek out and control the missed ones. With the presence of carriers a similar problem presents itself. Even when we can detect carriers in Diphtheria, Typhoid, etc., we are confronted with opposition from parents and friends in our attempt to isolate them. I am inclined to think we should revise our method of procedure. It is still common to take swabs from the throats of children in schools and isolate those shown to be carriers. This entails the opposition and criticism of parents and friends and we cannot be sure how long the suspect may be isolated. I think in these cases a virulence test should be done because there must be many cases showing the presence of Klebs-Loeffler Bacillus which are non-virulent. I think the procedure should be to do the Schick test on all children in the schools, find out those susceptible to diphtheria and then immunize them, not by anti-toxine which is a short lived immunity, but by a mixture of Toxine-anti-toxine which substance will produce an immunity which may last throughout life. Health Officers are loath to admit failure in the control of infectious disease but they must be frankly admitted. This does not mean that we should fold our arms and say the task is hopeless. We must carry on the fight, increasing where possible the number of workers and so perfect our organization that we may look for better results in the years that are to come.

TUBERCULOSIS.

Steady progress is I think being made in the fight against the White Plague. With the increasing numbers of Public Health Nurses throughout the District, the cases of Tuberculosis are being searched out and are placed under earlier treatment. It is being more and more recognized that contraction of Tuberculosis by adults is comparatively uncommon and that it is in childhood that the infection gains entrance. It is very important then that children should not be allowed to come in contact or remain in contact with any one who has an open lesion of Tuberculosis. If a father or mother of a family should have Tuberculosis they should be removed from contact with their children. This may look like a harsh measure, but is necessary for the safety of the children. Victims of T.B. should be sent to sanitoria where possible, if only for a time, that they may be taught how to live so that the danger to those about them may be minimized.

Good work is being done by Sanitoria in my District at Weston—Mountain San. at Hamilton and also in a smaller way at St. Catharines and Brantford. Public Health nurses are a great help in that they may go into the homes and teach the people how to live so as to avoid infection.

VENEREAL DISEASE.

I think we are getting more reliable statistics in regard to the incidence of these diseases than ever before. The establishment of clinics for free treatment of these cases is very beneficial. We have clinics at present established in my District in Toronto, Hamilton and Brantford. It is aimed to keep patients under observation until they are completely cured and non-infective.

SMALLPOX

We have had a number of cases of Smallpox in this district during 1921. There are still some remnants of an epidemic in Niagara Falls. The cases have been on the whole of a mild character. It is regrettable that the Vaccination Act is not better lived up to. Smallpox is one of the few diseases which we can prevent but compulsory vaccination is very unpopular and it is only when an epidemic is present or imminent that we can get the public to submit to vaccination. I have seen a large number of vaccinations done and have never yet seen any serious consequences from this slight operation. Anti-vaccinationists are quite active in some parts of the Districts and not much effort is made to refute the specious arguments which they advance. I think the advantages of vaccination should be constantly kept before the public. Carelessness and indifference are I think responsible for so few vaccinations being done. I believe it would pay all municipalities to vaccinate free of charge all who could be induced to come.

TYPHOID FEVER.

This disease is more common now in the smaller towns and rural sections than in the cities. We had an interesting epidemic of this disease at Vineland during the past year. There were about twenty-five cases in all with, I think, three deaths. On investigation it was found that the only thing which all the people in the different homes affected used in common was the milk supply. Every house where Typhoid was present got its milk supply from the same source. Then if the milk carried the infection it must have received it from handling. Mr. Moyer was the proprietor of the dairy farm from which the milk came. He also assisted in the milking. His blood showed a positive Widal, and on examination of the faeces, the germ of Typhoid was discovered. Milk was stopped from Mr. Moyer's dairy and the epidemic subsided. It is interesting in this connection to note that a few cases of Typhoid had been occurring in the neighborhood for a number of years, probably four or five cases per year. Probably the same carrier may have been responsible.

SCARLET FEVER.

There have been a large number of these cases in the District. Scarlet Fever and Measles are the most difficult cases to control, on account of the large number of mild and missed cases.

DIPHTHERIA.

As mentioned above I think it advisable here to use the Schick test on all children, and then try to immunize with toxin-antitoxine all those found to be susceptible to the disease.

CEMETERIES.

I have been unable as yet to visit all the cemeteries in my district. A great many of them, probably about one-third are in bad condition. There is considerable difficulty encountered in some cases in finding to whom the cemeteries belong. I am of the opinion that except in very rare instances the location and up-keep of a cemetery is not an important public health matter. If it is thought advisable for the Health authorities to have supervision over the cemeteries, then I would recommend that the local M.O.H. be made responsible for their inspection. Certainly they should, I think, be under local supervision.

CHILD WELFARE.

When the Public Health nurses were appointed by the Provincial Board of Health, two of them, Miss Hamilton and Miss Smith were allotted to my District. They have done excellent work and have been most successful in popularizing this most important branch of public health effort, and in having permanent nurses appointed to carry on the work following their demonstrations. No small amount of the credit due for the success of the nurses should be given to Dr. Bell, Dr. Middleton and Dr. Cunningham. Permanent Public Health Nurses have been appointed in Niagara Falls, Welland and Thorold. York Township is on the point of appointing one for the Township. The Town of Newmarket following a demonstration by Miss Smith and Miss Hamilton, appointed a nurse for three months, but the service was discontinued at the end of that time on account of lack of funds.

INDUSTRIAL HYGIENE.

The new department of Industrial Hygiene with Dr. Cunningham as Director has been very active during 1921. An extensive study of the Rubber Industry has been made by the Director in my District. I have visited the rubber industries, collected information and sent filled out returns to Toronto. Both employer and employees are deeply interested in the health hazards of the different forms of industry, and I have received very sincere co-operation on my visits to the various plants. This is a most interesting phase of public health work, besides being a very important one, and I look for developments that will be beneficial to employer and employee alike.

EDUCATIONAL.

A new department of medical education, under the directorship of Dr. Middleton has been instituted. This educational propaganda in public health work is really the key-note of all endeavour along public health lines. We must educate the public and then reforms will come rapidly.

It is no use asking for money for public health work unless the public has been taught the idea, and become possessed of it, that the spending of money in public health work is an investment and not an expenditure. Newspapers, moving pictures, cards and the public platform have all been utilized in my district and I think with beneficial results.

GENERAL WORK.

In addition to the special work indicated above I have had a large number of calls from municipalities in the District. A great many of these related to nuisances. It is still far too commonly believed that the chief function of the Health Officer is to abate nuisances and eliminate bad odours. He is in some places not yet far removed from the outhouse inspector and bad odour eliminator. It cannot I think be successfully shown that bad odours produce disease, so why waste the time of Health Officials in suppressing them, when that time could be more advantageously spent in some public health work, such as obtaining safe water and safe milk for the citizens, child welfare work, the suppression of communicable diseases, including venereal disease, the fighting of Tuberculosis and on Industrial Hygiene.

CONCLUSION.

I wish to acknowledge in conclusion that in my work as District Officer of Health, during the past year I have received the utmost consideration and support from the Minister of Health, the Chief Officer of Health, and the heads of all the various departments engaged in public health endeavour in the Province. Team work has I think been the outstanding feature of the year's activities and I wish to acknowledge my gratitude to these men and women for very timely assistance given during the year 1921.

D. A. McCLENAHAN,
D. O. H.

ANNUAL REPORT FOR 1921 OF DISTRICT No. 4.

I have the honour herewith to submit for your consideration, a summary of my work for 1921, in the Counties of Prince Edward, Hastings, Northumberland and Durham, Peterborough and Haliburton, Victoria, Ontario, (Simcoe and Muskoka, for part of year).

GEORGE CLINTON, M.D.,
District Officer of Health,
Belleville, Ont.

All Public Institutions, viz:—Hospitals, Asylums, Gaols, Houses of Refuge, Children's Shelters, Summer Resorts and Local Municipalities in my district were visited, Sanitary Inspections made and detailed reports were sent to the Provincial Board of Health.

A goodly portion of my time has been taken up with special visits by request of the Local Medical Officers and Local Boards. It has been gratifying to know that all these visits were effectual in adjusting various local grievances without going to the Courts.

COMMUNICABLE DISEASES.

Smallpox.—At the Portage, an unorganized district near Huntsville, I found several families, from history given, had recovered from smallpox and two families then in the active stage.

Ennismore.—Several cases, but by the co-operation of the Medical Officer of Health, Local Board, and together with the Parish Priest, Rev. Father McCauley, all school children and exposed adults in the locality were vaccinated.

Visited L'Amable and instructed the Local Board to organize effectively, as there had been laxness in dealing with an outbreak of smallpox. Also inspected a number of other places in this locality.

North Marysburgh in Prince Edward County had twenty-two places quarantined at one time.

Picton and Wellington also had several cases.

Bowmanville.—Several severe cases and one death.

Many cases in *Belleville.* Nearly all removed to Isolation Hospital. Preventative measures and fully carrying out the regulations re vaccination, quarantine, etc., the disease was soon under control.

TYPHOID FEVER.

An epidemic of typhoid in Bowmanville—in all six cases—was traced to one milk vendor, who was found to be a typhoid carrier. Measures taken resulted in the sale of dairy and cattle, thereby stopping the epidemic.

Also an outbreak at Colborne—six cases and one death. All these cases were found to have originated from the same source, a polluted well. The family using this well, and friends visiting them, were the only ones affected. The well was closed and there were no new cases.

SCARLET FEVER AND DIPHTHERIA.

Peterborough.—An epidemic during the whole year—mostly mild cases, and its control in consequence has been difficult. One death from Diphtheria.

Several cases in *Oshawa, Belleville* and *Bowmanville*, and smaller places. Strict quarantine and isolating carriers had the desired effect.

Only a few cases of Measles and Whooping Cough reported.

SUMMER RESORTS.

During July and August, all Summer Resorts in my district were visited. viz:—The Kawartha Lakes, Rice Lake, Hayden Park, Whitby at the Lake, Oshawa, Sand Banks, Prince Edward County, Presqu'ile near Brighton—and conditions found generally satisfactory, with willingness to follow up suggestions for sanitary improvements where needed.

RURAL SCHOOLS.

Many of these have improved, but few are up to the standard requirements in sanitation. If the Local Municipal Officer of Health had power to order change much more effectual work would be done. Recommendations are too frequently ignored by the Trustees, and more concentrated effort is required.

CANNING FACTORIES.

I visited the Canneries in Northumberland, Durham and Prince Edward Counties. The disposal of waste in many cases was unsatisfactory, causing a nuisance in the locality.

SLAUGHTER HOUSES.

Marked improvement found in conditions at various Slaughter Houses, in district, resulting from carrying out recommendations previously made.

WATER SUPPLIES.

Peterborough.—A new filtration plant, costing about $250,000.00.

Oshawa.—Shifting sand filter.

Bowmanville.—Taken from Springs, eight miles north. Ample supply and good pressure.

Port Hope.—Sand filtration.

Cobourg.—Five Mechanical Filters.

Brighton.—Springs, four miles out. Piped into village.

Trenton.—Mechanical Filters.

Orillia.—Springs from the mountain.

Barrie.—Artesian Wells.

Collingwood.—Filtered from Georgian Bay.

Belleville.—The water is taken from the Bay of Quinte and not filtered, although it is freely chlorinated. Conditions are far from satisfactory and a filtration plant is very necessary.

Deseronto.—Has water for fire purposes taken directly from the Bay.

PICTON WATER AND SEWAGE.

The sewage disposal and water supply at Picton is very unsatisfactory. The water is supposed to be used only for fire, lawn and cleaning purposes, but this is a dangerous position, as there is no doubt water is used from the taps for drinking purposes on occasion.

This water is taken from the harbour only a few hundred yards from the sewage disposal outlet. Sewage system consists of Septic tanks, cess pools, and pit closets, emptying into what are practically drains and ditches leading to the Bay.

In August, I visited plant of The Willard Chocolate Company at Picton used for chocolate products, evaporating milk and cheese manufacture. Found conditions here very unsatisfactory, and recommended closing up the plant. There were no screens on the doors and windows, and swarms of flies covered everything. The milk was sterilized before evaporated. The whey filled the cess pool which overflowed into a ditch causing a very offensive odor.

Public Health Nurses.

In my District, Misses Heeley and Vrooman began work at Orillia and were very successful—combined Ladies Organizations, engaged and paid a Public Health Nurse to follow up the preliminary work already done.

Orillia already had a School Nurse. At Barrie, Miss Heeley was successful in having a nurse appointed to follow up her work.

Miss Vrooman was well received at Tottenham, Allison and Beeton, but no nurse was appointed in any of these places.

Miss Heeley spent some time at Bowmanville, successfully. The Council would not provide a nurse to continue her work.

At Oshawa there are now two Public Health Nurses, besides a School Nurse, also a qualified Sanitary Inspector. This town is now very well organized, and supported in Public Health matters.

Cemeteries.

In June and July, I inspected 51 Cemeteries and reported.

I have failed to find that recommendations have been carried out. In my district there are ninety-one municipalities with from one to six cemeteries in each.

I do not see where this work has any bearing on Public Health Work: it absorbs much time that could be given to other duties.

Report of Dr. G. Clinton, to Provincial Board of Health, March 14, 1922.

Whitby Gaol.

Building	Stone.		
Gaoler	John Stiner.	Salary.	$800.00.
Matron	Mrs. Stiner.	"	$200.00.
Physician	Dr. McGillivray.	"	$150.00.
Turnkey	H. Elliott.	"	$900.00.
Prisoners	13 male. 0 female.		
Total cells	28.		

Flush closets and running wash water in each corridor.

All clean and in good order.

Cost per day for prisoner, 16¼ cents.

Whitby Town.

Population	3,500.
Clerk	A. W. Jackson.
Local Board of Health	The Mayor, F. N. Burn, A. H. Allin, Chairman, and M.O.H.
M.O.H.	Dr. McGillivray, salary $100.
S. Inspector	C. S. Lavery, salary $25., and constable.
Physicians	Drs. McGillivray, E. L. Proctor, E. B. Neely, R. T. McLaren.
Water Commissioner	

Water filtered from lake—good.

Sewage	Sedimentation and sprinkling filter.
Garbage	No regular collection, except regular spring cleaning.
Milk	By-law. No license.
Meat	By-law. No license.
Slaughter house	Very good.
Light	Electric.
Fire protection	Voluntary brigade.

House of Refuge—Whitby.

Building	Brick, 2½ storey.
Farm	62 acres.
Superintendent	J. F. Lavery. } Salary, $1,150.00.
Matron	Mrs. Lavery.
Nurse	Mrs. F. Marshall, salary $480.
Physician	Dr. McGillivray, " $300.
Inspector and Secretary for Commission	A. H. Christian, salary.
Inmates	45 male, 26 female.
Water	From town.
Sewage	13 flush closets, 7 baths, all connected with town.
Inmates	Bathed weekly.
Servants	1 man. Salary $45.00 per month.
	1 cook. " $30.00 " "
	1 laundress " $25.00 " "
Animals	2 horses, 12 cattle, 60 hens.

All clean, tidy, only some rooms overcrowded.

Whitby Public School—(New).

Building	Brick, 1 storey and good basement, for play room. Lavatories, wash basins and drinking fountains. Heated by steam. Six class rooms well lighted. Advised frosting upper half of Windows.
Ventilation	Very poor. None from basement and lavatories only stairways to hall and class rooms.

Building cost	$60,000 If properly ventilated would be first class.
Pupils	235.
Kindergarten	53.
M.O.H.	Secretary of school.

Victorian Order Home—Whitby.

Matron and manager	Miss Bain. Salary $75. per month.

Acts as School Nurse, Public Health Nurse, also for accouchements.

Two rooms for confinements.

Thirty confinements in home. 40 outside.

Havelock.

Population	1,300.
Clerk	M. Lancaster.
L.B.H.	Reeve W. Jones, H. Faulkiner, and M.O.H.
M.O.H.	Dr. Holdcroft. Salary $100., $25, and expenses for attending annual meeting.
S. Inspector	P. McAndrew. Constable.
Water	All wells.
Sewage	Pit closets, but have a By-law to abolish these, but not enforced.

No contagious diseases at present.

Advised boiling water from all contaminated wells, also chlorinate.

Wells will never be safe until all pit closets are abolished. Strongly advised enforcing By-law re Pit Closets.

Havelock School—North Hall.

Building	Frame, cement veneer. South cement block, two storey. Eight class rooms, eight teachers.
Pupils	About 300 pupils.
Heated	By steam.
Ventilated	By windows.
Closets	Cement pits outside. Sixteen seats for boys. 16 seats for girls. Teachers have separate closets. All cement boxes.

Peterborough Filtration Plant.

Five beds in operation.

Each bed filters 1 million gallons in 24 hours.

Reservoir, 2 million gallons.

Two coagulating basins, outside. Eight thousand gallons. Sulph. Alum for precipitant, 1 grain per gal.

Chlorinated 2 lbs. to 1 million gallons.

Inspected Restaurants.

328 George Street, Peterborough. Dominion Cafe. All in good condition, and cellar clean.

162 Simcoe Street. Classic Cafe. All good. Cellar.

415 George Street. Paris Cafe. Good. Cellar also good.

394 George Street. Home Lunch. Lunch counter and cafe. Cellar and room clean.

Nashua Paper Company, Peterborough.

Manager	R. A. Brown.
Employ	Forty men, 10 girls.
Manufacture	Waxed and gum paper.
Sanitary closet provided for females, separate.	
Water	Use paper cups, from city supply.

Colonial Weaving Company, Peterborough.

Manager	Wm. Hartley.
Manufacture	Labels, trimmings, narrow patterns for trimming.
Employ	Six men, 30 girls.
Sewage	Two Fl. closets for girls. Two Fl. closets for men.
Water	From city. One drinking fountain.

ANNUAL REPORT FOR 1921 OF DISTRICT No. 5.

Dear Sir:

I have the honour herewith to submit my annual report for the year 1921, of my work in District No. 5.

This district has a population of 326,958 people, and includes the counties of Dundas, Stormont, and Glengarry, Leeds and Grenville, Frontenac, Lennox and Addington, Lanark, Renfrew, Carleton, and the City of Kingston.

Since the head office of the district was transferred from Cornwall to Ottawa, in 1920, it has been utilized to a much greater extent than formerly, owing to the convenient situation and the excellent railway and road communications. Concurrently with the extension of work needing visits to a specified locality, the office correspondence has greatly increased, communications now exceeding two thousand per year. While mostly every day and sometimes many times a day communications have been had by telephone with Health Officers, Boards of Health, and others, regarding sanitary and other matters pertaining to the work of the district.

The automobile supplied to the district officer by the department has enabled him to accomplish a much larger amount of work during the suitable season, than formerly, and this feature of the work will be greatly amplified, as the good roads system is extended.

The district has been thoroughly inspected in a routine manner during the year, especially the Public Institutions.

Public Institutions.—A report on their sanitary condition has been filed with the department and also, when thought advisable, a special report has been sent to their governing bodies. The requests for the elimination of unsanitary conditions or for the installing of needed improvements have generally, but not in all cases, been promptly complied with by those in charge of the management. The following Public Institutions are referred to:

Asylums.

Brockville, Kingston, (Rockwood).

Hospitals.

Kingston.—General, Hotel Dieu, Mowat Memorial.
Brockville.—General, St. Vincent de Paul.
Cornwall.—General, Hotel Dieu.
Smiths Falls.—General (St. Francis), Public.
Renfrew.—Public.
Pembroke.—General, Cottage.
Almonte.—V.O.N. Hospital.

Houses of Refuge.

Kingston.—House of Providence, County House of Refuge.
Leeds and Grenville.—House of Refuge, Athens.

Dundas, Stormont, and Glengarry. Cornwall.—House of Refuge: St. Paul's Home.
Lanark, Perth.—House of Refuge.
Prescott and Russell, L'Orignal.—House of Refuge.

County Jails.

Kingston, Napanee, Brockville, Cornwall, L'Orignal, Perth, Pembroke.

Orphanages and Children's Aid Shelters.

Kingston, Napanee, Brockville, Cornwall, L'Orignal, Perth, Pembroke.
Brockville.—Old Ladies Home. Children's Aid Shelter.
Cornwall.—Nazareth Orphanage.
Renfrew.—Children's Aid Shelter.

SUMMER RESORTS.

This end of the Province is well supplied with Summer Resorts, which cater, not only to Canadians, but to an increasing extent to the United States tourists. All these resorts have been carefully inspected during the year and while far from being up to the desired standard in sanitation they show each year an improvement on the preceding year. The local M.O.H., and local sanitary inspectors are taking a more lively interest in conditions than formerly, but the influence, having the most weight is that from the summer residents themselves, who rightly claim that the chief benefit they derive from the municipal taxation is the sanitary supervision of the waters and cottages by the local inspector.

The principal summer resorts are: Thousand Islands; Rideau Lakes chain, including Portland, Chaffey's Locks, and Jones' Falls; Lower St. Lawrence, including Stanley Island, Hamilton, and Colquhoun Islands; Christies Lake; Charlton Lake; and the numerous summer resorts along the Ottawa River.

COMMUNICABLE DISEASES.

No severe outbreak of communicable diseases has occurred in this district during the year. Smallpox of a mild type occurred sporadically, but was in most cases quickly brought under control by the Local Boards. The exceptions were in the vicinity of Verona, Battersea, and Seeley's Bay.

Owing to the continued increase in the number of persons vaccinated, this end of the province is now better protected in regard to Smallpox than for many years past. Scarlet Fever outbreaks are still of the very mild type and for this reason very hard to control. Diphtheria, Typhoid Fever, and the other notable communicable diseases were much below the average.

The splendid service rendered to local Boards of Health and physicians by the Provincial laboratories and the bountiful supply of first class Biological products by the Provincial Board is highly appreciated and was a prominent factor in the good results apparent for this year.

CEMETERIES INSPECTION.

By Order-in-Council 31st May, 1921, district officers were appointed inspectors of cemeteries for the purposes of the Cemeteries Act. Considerable work was done since the above date in connection with the inspection of cemeteries. It was, however, found that the number and the difficulties connected with the ownership were much greater than expected. Already 588 cemeteries have been located with 17 municipalities not yet reported. I do not think it would be possible to properly inspect and enforce the regulations concerning these cemeteries without the district officer neglecting his usual work.

V.D. CLINICS.

A clinic has been established at the Water Street Hospital, in Ottawa, which should prove of very great service, owing to its central location. The clinic in connection with the Kingston General Hospital has, unfortunately, temporarily closed.

At least four such clinics could be established advantageously in this district, so as to enable the Health Officers and the Medical men to thoroughly grapple with conditions existing.

HEALTH NURSES.

The two Public Health Nurses working in connection with the Division of Maternal and Child Welfare of the Provincial Board of Health have given during the year demonstrations at Smiths Falls, Perth and Lanark. Their work in the above mentioned localities, it is hoped, will pave the way for the appointment by the municipalities interested of permanent Public Health Nurses, paid and controlled by the local authorities under the supervision, at least to a certain extent, of the Division of Maternal and Child Welfare.

Miss Meiklejohn, who had done excellent work overseas as well as in this district, was induced by the New Brunswick Health authorities to take charge of this Division in that province. Ontario loses a very excellent member of the Public Health Nursing staff, while New Brunswick has secured a head for the new division of Child Welfare who is sure to make it a success.

Miss Olive Gipson, Public Health Nurse, in charge since the inception of the work in this district, had proved herself perhaps one of the most efficient school nurses in the province and she has demonstrated in Smiths Falls and Perth the benefits to be derived therefrom with marked ability. The County Council of the County of Lanark has requested the Provincial Board to have Miss Gipson and her associates give a demonstration of County Public Health Nursing before the June session of next year. At this meeting the Council will come to a conclusion as to whether they should appoint permanent Public Health Nurses or not.

Among the more notable conditions, other than the routine inspections and outbreaks of communicable disease, requiring attention, and generally one or more visits with location are:—

Eastview.—Unsanitary conditions in connection with the town lock-up.

Gloucester Township.—Valiquette rendering plant.

Ottawa City.—Boards of Health, re the establishment of a Provincial laboratory.

Metcalfe.—Sewer difficulties.

Westboro.—Water and sewer installations.

Chesterville.—Contamination of the river by the condensary, also installation of sewer and water works.

Crysler.—Cheese factory nuisance.

Morrisburg.—Unsanitary barber shops.

Winchester.—Septic Tank nuisance, and sewer installation.

Bath.—Unsanitary residences.

Kingston.—Slaughter houses, etc., etc.

Pittsburg.—Unsanitary dwellings.

Westbrook.—Cheese factory.

Alexandria.—Unsanitary dump.

Westport.—Water supply.

Navan.—Unsanitary school.

Calabogie.—Drainage difficulties.

Renfrew.—Local nuisances.

South Lancaster.—Unsanitary conditions.

Cornwall.—Unsanitary conditions.

Finch.—Unsanitary hotel.

Lanark Village.—Establishment of cemetery.

Perth.—Water supply.

Smith's Falls.—Water supply.

Napanee.—Sewer system regulations.

Brockville.—Municipal piggery.

Elgin.—Septic tank nuisance.

Kemptville.—Charge against physicians for non-report of communicable diseases.

Casselman.—Slaughter houses.

Plantagenet.—Installation of a water supply.

Rockland.—Water supply and sewers.

ANNUAL REPORT FOR 1921 of DISTRICT No. 6.

North Bay, Ont., Jan. 1st, 1922.

To the Provincial Board of Health, Ontario.

From W. Egerton George, M.D., District Officer of Health.
District No. 6, North Bay.

Comprising the Districts of Temiskaming, Nipissing, Parry Sound and that portion of the District of Sudbury, lying to the East of a line drawn Northward from the Eastern boundary of the District of Manitoulin.

The fact that Health Districts No. 6 and No. 7 were divided so as to make an additional Health District has added greatly to efficiency and has improved the supervision of each of these Districts; not only by the addition of the time spent in those sections which were cut off, but by the addition of a great deal of time lost in travel. The Chief of the Department is to be congratulated on this measure of relief which he has obtained for New Ontario and it is to be hoped that his continued effort will be rewarded by further adding to this section of the Province one or two more District Officers. The unorganized territory must look entirely to the District Officers for its health supervision and its sanitary inspection. Nuisances which are reported from there frequently must be satisfied with a letter from that officer demanding the removal of the danger, as time prevents the personal investigation necessary to prompt correction. Because of the size of the Districts, the difficulty of keeping in touch with outlying sections and the excessive demands on the time of the District Officers, neither nuisances, cemeteries nor communicable diseases are receiving the attention they require. For these reasons, in lieu of the possibility of making this increase in the number of the District Officers I would again respectfully offer the suggestion, repeatedly made, that each of the District Officers be given a Sanitary Inspector to assist him in the investigation of unsanitary conditions, the inspection and supervision of cemeteries and in the placarding and police duty necessary to the control of communicable diseases.

During the year I travelled 21,692 miles at an expense to the Department of $1,189.59 including the expense of upkeep and running car.

The car has opened such a number of new lines of communication and travel, has brought me in touch with so many local officials who could not otherwise have been seen; has made accessible to personal attention the problems of the vast rural sections of Parry Sound, Nipissing and Sudbury, and has so well supplied the two essential factors of speed and economy that I feel that it is deserving of this passing notice.

Early in the year when the laboratory was opened the office was transferred to the laboratory building. The centralization of offices has been the means of considerable saving in the duplication of phones, stenographers, etc. It has also been of benefit to the public who without further search find in one building every Provincial Official connected with the Health Department.

MEDICAL OFFICERS OF HEALTH.

The salaries paid by towns, villages and townships is very inadequate, and the work is suffering seriously because of this want of remuneration to the Health Officers. The deficiency which was so admirably set forth in Dr. Robt. E. Wodehouse's paper, read before the Health Officers convention last May, has been verified by personal investigation within the District. I have used every opportunity to encourage municipalities to pay more for the service of the Health Officers. During the year, Dr. Cook, of Sudbury, appealed to the Judge for a decision as to what was a reasonable salary and I am pleased to report that the Judge found it necessary to raise it from $600 to $1,500. If we are to have efficient supervision of communicable diseases, tuberculosis, venereal diseases, child welfare, milk, water, sewers, and nuisances, backed by proper statistics and health education there will have to be a change in the proportion of taxes used for public health purposes. Towns of the size of North Bay which should have a health budget of $7,500 to $8,000 are providing from $4,000 to $5,000. How can we expect the health officials to pay out of their own pockets for what ought to be done?

COMMUNICABLE DISEASES.

Below is a list of the Communicable Diseases reported within this District for 1921.

DISEASES	CASES	DEATHS
Small-pox	222	0
Scarlet	112	6
Diphtheria	170	24
Measles	250	3
Whooping Cough	5	0
Typhoid	57	12
Tuberculosis	8	13
Infantile paralysis	0	0
Meningitis	1	3
Influenza	65	1
Influenzal Pneumonia	2	12
Acute Primary Pneumonia	0	8

SMALLPOX.

There were no less than thirty municipalities within the District that reported smallpox. Undoubtedly there were many more cases not reported than were reported. There were hundreds of cases in unorganized districts and practically none of these cases were reported at all. There is no provision for getting statistics in the unorganized municipalities. It is interesting to note that there were no deaths. The mildness of the outbreak is slowly removing the fear of the disease. However, the general prevalence caused many hundreds to be vaccinated. Those municipalities which reported the most cases were invariably found to be those that have made the greatest efforts to stamp it out.

This is indicated by the fact that no great number were reported at one time, but one or two were found each week over a considerable time, until the disease disappeared. It was often only by the most careful follow-up work that mild, unrecognized, unreported cases were discovered and prevented from perpetuating the disease.

SCARLET FEVER.

Seventeen municipalities reported Scarlet Fever. The disease was unusually mild. Many cases did not have a rash; these were not recognized, thus explaining the prevalence and the difficulty of stamping it out. The most serious epidemic occurred in Burk's Falls where it extended into the surrounding townships. In the country districts little care was taken to prevent its spread. Since the patient was sick but a day or two the doctor was not called. The disease slowly advanced in the rural sections from which places the town was reinfected over and over again.

DIPHTHERIA.

Twenty-five municipalities reported Diphtheria. Like smallpox and scarlet fever the disease was very mild. Many cases did not have a membrane. In the townships between North Bay and Mattawa there were actually hundreds of cases with but a very few reported. The disease went through family after family without any deaths. When it was thought necessary to call the doctor his efforts were almost useless and the patient died. It was rare for the physician to be called during the first week of the illness. Diphtheria is still prevalent in the section about Bonfield. The Health Officer is making strenuous efforts to get it under control, with not too encouraging results. At Sturgeon Falls and in the township of Springer there was another extensive outbreak, very similar to the one described. Indeed, it seems to have been carried from the townships before mentioned. There were 15 cases reported from the town of Sturgeon Falls and twelve from the township of Springer. When an investigation was made it was found to have infected family after family. The symptoms were exceptionally mild; rarely did a family recognize the disease, and when they did it was after one of its members began to go down hill. It is important to recognize the fact that the history of these epidemics has been, that imformation regarding them was delayed in reaching the District Officer. At Sudbury and Burk's Falls there were outbreaks of the same mild character. In the township of Bucke occurred the most severe outbreak of the year. They reported ten cases and seven deaths. I believe all of these that died did not have a physician until late. The severity of the outbreak brought all new cases to the attention of the Health Officer who had no difficulty in preventing further spread.

MEASLES.

Practically the only epidemic of Measles occurred in the town of Parry Sound which reported 215 of the 250 cases returned. There were no deaths from Measles reported outside of those from that municipality. Note that of seven deaths that took place in Parry Sound from communicable diseases, three were from Measles.

WHOOPING COUGH.

There was no epidemic of this disease reported. Only once before my tenure has this occurred. The importance of the fact should be reflected in the infantile death rate as whooping cough produces its highest mortality in the first year of life.

TYPHOID.

Sudbury, Haileybury, Parry Sound and Byng Inlet were the worst offenders with regard to the prevalence of this disease. All of these places have unenviable records. Sudbury gave returns of deaths only, so that we have no idea of the number of cases that really occurred, except by analogy from the number of deaths. There are returns of eight deaths. Haileybury gives twenty-eight cases with one death. I have reason to believe that there were about eight deaths. Parry Sound reported 11 cases and one death while Byng Inlet reported four cases. It must be said for the Health Officer of Haileybury, Dr. Gordon F. Jackson, that he urged the council to install a liquid chlorine plant to supplement their filters, even going so far as to offer to raise for the council half of the cost. Dr. Jackson is to be commended for the attitude he has taken and if action is further delayed by the council I would strongly advise that a mandatory order be issued to the town by the Board. In Sudbury they have a Wallace and Tiernan liquid chlorine apparatus but apparently the doseage has been kept too low or there is not adequate mixing of the chlorine with the water. At Parry Sound they still continue with a chloride of lime system but there seems to be great variation in the chloride content of the lime.

TUBERCULOSIS.

I regret to have to report year after year more deaths from this disease than cases returned. Health Officers seem loath to order the dangerous and open cases to a sanitarium, even when it has been shown that they are a serious menace to the family.

INFANTILE PARALYSIS.

This is the first year that I have not had a case of this disease reported.

MENINGITIS.

There seems to be serious neglect somewhere when there are more deaths than cases reported.

INFLUENZA AND INFLUENZAL PNEUMONIA.

It is very gratifying to see how the virulence of this disease is petering out. Pneumonia complications seem as dangerous as ever but the proportion of those developing pneumonia is small and the incidence of the disease much less.

ACUTE PRIMARY PNEUMONIA.

Although there were returns for eight deaths from this disease there were no cases reported. It is apparent that efficient reporting of pneumonia cases will be of slow growth.

VENEREAL DISEASES.

Requests from physicians for information regarding free treatment of venereal diseases have frequently been received during the past year. For their enlightenment I had this discouraging information that at no place within this Health District was such administered. Physicians, in my opinion, may be excused for not wanting to add venereal diseases to their charity work. I believe the prevalence of these diseases requires some additions to the admirable efforts that already have been made by the Provincial Board of Health to cope with them. Where there are such large sections without service to the free clinics that have been established in municipalities over 20,000 others should be supplied by the Board; if not on the conditions agreed to by the larger municipalities, then on the best terms that can be arranged. Possibly a travelling clinic such as has been suggested by the Director of the Division will be found most suitable to the needs of the country.

Enlarged Thyroid Gland.

At North Bay and to the South and East of that place the prevalence of goitre is very noticeable. Dr. Dafoe of Callander has a record of about 1000 cases. The Disease occurs about puberty and in a very large proportion of children, where in certain sections there are between 60 per cent. and 75 per cent. affected. Quite a number of cases develop exopthalmic symptoms. The theory that the disease is due to a deficiency of lime would seem to be substantiated here as the laurentian granite which runs from the St. Lawrence River through the North Bay region and Westward into New Ontario, carries very little lime. I would advise that the Department investigate the prevalence of enlarged thyroid in those sections of Ontario where this rock appears and where the population is above a certain standard number per square mile. The treatment of all children between 11 and 17 years with potassium iodide twice yearly, with about 30 grains each treatment might give us the satisfactory results obtained elsewhere. The treatments usually extend over a month, Spring and Fall. I feel sure that this branch of preventive medicine or preventive surgery is deserving of most careful consideration and I would strongly commend it to the attention of the Provincial Board of Health.

Public Health Nursing and Child Welfare.

Up to the end of the year demonstrations by the two Provincial Public Health Nurses attached to this District have been carried on in four municipalities, Timmins, Township of Tisdale, Sturgeon Falls and Sudbury, in the order mentioned. At the end of the demonstration in the Township of Tisdale the Director of the Division of Maternal and Child Welfare thought it advisable to transfer Miss Micklejohn to District No. 5, as it was essential to have a nurse in that District who could speak French. Miss Halley who came to us from District No. 5 brought with her a knowledge of School Nursing which strengthened the weakest side of our forces. From this time the demonstrations were continued by Miss Linton and Miss Halley. One cannot pay too high a tribute to the self-sacrificing devotion to the public service by these nurses, including Miss Micklejohn.

The evidence collected by the Provincial Nurses convinced the councils of three of the municipalities that Community Nurses were essential to the protection of the babies and children from the pitfalls which beset the pathway of life and health. In two of the municipalities, Timmins and Sturgeon Falls, the School Boards co-operated with the Local Boards of Health in supporting the scheme for the securing of a nurse. It is pleasing to report, further, that the Public Health Nurse in each place has undertaken School Nursing, thus bringing under the Board of Health the valuable information gained from this branch of the service. The division of authority which our Provincial Law provides has not proven to be an unmixed blessing. It is most encouraging to see the local authorities co-ordinating to the purpose of improving the service from the standpoint of efficiency and economy. What greater proof could be offered to the Government that the divided authority of the present legislation is wrong, when local authorities are seeking by co-ordination (the only opening left to them) to unify the control in the interests of efficiency and economy.

It is to early to make any general observations from the results of the efforts of the Community Nurses.

At the present time Miss Halley is making a demonstration in North Bay and I am hopeful that the evidence she is collecting will take such hold of the council that this town will be added to the rapidly increasing list of municipalities which represent the forces for the saving of the babies and for the remedying of those defects of children which make for adult physical unfitness.

LABORATORY.

Early in the year a Public Health Laboratory was established by the Provincial Board of Health at North Bay. This is a bacteriological laboratory only: no chemical analyses are carried on. The staff consists of a capable director, an assistant and a stenographer. The laboratory is a depot for the Northern Districts and carries a full stock of vaccines for small-pox, typhoid and whooping cough, and serums for diphtheria, meningitis and tetanus.

The great advantage to this section of the Province is the time saved in getting specimens and reports to and from the laboratory; also the time saved in getting delivery of serums and vaccines. We have histories of several cases during the year where this saying of time has apparently saved a life.

Typhoid carriers have been discovered and efforts made to protect the public from this subtle source of danger. Diphtheria carriers have been found, one of which did not have any record of having the disease. Water supplies have been found polluted, not least of which is the North Bay supply. This water has usually been considered safe in the Winter time but this year intestinal bacteria have been found to an unsafe degree in nearly every sample.

The great need is to get physicians to make fuller use of the facilities provided; to get Boards of Health to keep proper supervision of their water supplies by frequent sampling; to get the public to interest themselves in the institution and to show some appreciation of the protection it affords.

MILK.

Municipal milk supplies have not had the attention they deserve. The town which received the greatest amount of supervision is Iroquois Falls but only after there had been quite a severe outbreak of dysentery. However, it is pleasing to report that the Health Officer, Dr. Donnely, was able to use this epidemic as propaganda so effectively that he now has a splendid new pasteurizer which will prevent a repetition of the occurrence. Dr. Donnelly received the full support and help of this office both in the investigation of the outbreak and in his request for a pasteurizer.

Haileybury and Cochrane had some slight trouble with their milk. As the trouble was not continuous an investigation of the conditions under which the milk was being produced failed to reveal the cause. Undoubtedly it was due to some slip in the technique.

It is surprising now that the value of pasteurizing is everywhere admitted that there are but four plants in this District. Sudbury has one and North Bay two. Not nearly all the milk of these two places is pasteurized. The fourth is located, as above stated, in Iroquois Falls.

WATER SUPPLIES.

Although there were no new installations (municipal) during the year, yet measures were adopted by two municipalities toward rendering safe the supplies which bacterial analyses had indicated to be impure. Sturgeon Falls which formerly obtained its supply from the Sturgeon River, just above the dam of the Spanish River Pulp and Paper Company's mill, found that there was serious danger from river pollution by that portion of the town above that point. They accordingly removed the intake to a point on the river well above the corporation limits. The pumping instead of being done by the Paper Company will in future be carried on by the town.

Timmins obtains its supply from the Metagami River. The water has frequently been found polluted. It is well known that a number of companies are operating lumber camps above the town. For the reasons given a Wallace and Tearman liquid chlorine apparatus was installed under the direction of the Board of Health. The chlorine is discharged into the pump well directly in the current of the intake from the river.

Haileybury, Sudbury and Parry Sound, Cochrane, North Bay and Byng Inlet are known to have polluted supplies. Haileybury, Sudbury and Parry Sound have partial treatment. Haileybury requires to augment the efficiency of their filters by chlorination. In Sudbury there does not seem to be a variation in the quantity of chlorine being used to meet the variation of the quantity of water being pumped. Parry Sound uses a chloride of lime plant. This has proven unsatisfactory because of the variation of the chlorine in the chloride of lime. Cochrane has two sources of supply—springs and a lake. The lake water needs to be chlorinated. Water taken from the taps in North Bay shows bacteria of intestinal origin consistently in from 5 to 25 cc's. That this should be present in the Winter time indicates to me that the water is not coming from 650 feet out in the lake. I am suspicious that there is a break in the intake pipe and that they are really getting shore water. An effort will be made to prove or disprove this. Byng Inlet requires chlorine to render their water safe.

SEWERAGE AND SEWAGE DISPOSAL.

The only efficient disposal system in this District was completed toward the end of the year in Timmins. This was made necessary because of the fact that the only place available as an outlet for the Timmins sewers is the Metagami River. The river is used farther down as a water supply for Smooth Rock Falls. The disposal plant is of the activated sludge type and is supposed to be the last word in sewage treatment. We hope that when it gets into operation it will prove to be as effective as its designers anticipate.

At Haileybury the effluent from their septic tanks reaches the lake at a point about one thousand yards from the mouth of the intake of their water supply. At times the pollution of the water is so great that bacteria of intestinal origin are found in from 5 to 25 cc's. in the taps after it has passed through the filter. I feel sure that the effluent from the septic tanks must account for this by occasionally reaching the intake in more or less concentrated form.

Toward the end of the year the T. & N. O. Railway indicated their intention to extend their line to Oil Can Portage on the Abitibi River about 68 miles north of Cochrane. Two grave problems immediately presented themselves, first, the use of this water by the construction gangs, second, the water is known to be seriously polluted by the Iroquois Falls sewerage. We will make every effort to warn construction companies against the use of this water and to encourage them to insist on the vaccination of their men against typhoid. Iroquois Falls has an order for the construction of a sewage disposal plant which it will be necessary for them to complete at an early date. I would advise that the Department order Iroquois Falls to proceed immediately with its construction.

At Sturgeon Falls a trunk sewer has been built to connect up their many outlets into the river. The outfall will be carried well below the town.

The very heavy claims of the Roman Catholic College at North Cobalt against the town of Cobalt and the Township of Coleman for the pollution of Mill Creek was settled out of court.

The fact that Parry Sound discharges its sewerage in Seguin River just before it empties into the harbour has frequently been reported upon. The current at times goes out through the gap and travels down the shore over their intake pipe. There seems to be no other explanation of the serious pollution frequently found in their water. The building of a trunk sewer to connect up their many outlets and carry to one point for treatment is met by engineering difficulties and expense which is prohibitive.

PUBLICITY AND PUBLIC HEALTH EDUCATION.

During the year every opportunity has been seized to appease the popular desire for information on matters concerning Public Health. Pamphlets have been distributed and a number of lectures given. Efforts have been made to make the District Office a bureau of authentic information available at all times to municipalities and to the public. If we have not the data required we secure it if possible. The public should not be left to get information from charlatans or unreliable sources. Municipal authorities need frequent reminders when their health expenditures are relatively small. For unless this is carefully supervised effective health endeavour fails.

VITAL STATISTICS.

As mentioned in several previous reports it is a matter of regret that birth and death statistics are not available to the District Officers. The absence of this data seriously interferes with his efficiency. When the communicable returns were first sent to them these officials soon discovered many local Secretaries of Boards of Health who were neglecting their duty in sending these returns. In fact, not infrequently one is still found who is ignoring this responsibility. It is the opinion of this office that birth and death returns in the hands of the District Officers would make important discoveries, as well as make available data upon which they could judge the progress and improvement from year to year.

HOUSING.

Timmins, North Bay, Kirkland Lake, Cochrane and Sudbury are growing very rapidly and although a large number of houses were built in each place this was not sufficient to accommodate the numbers who have been crowding into these towns. Efforts have been made to prevent the extra numbers from occupying too limited a section. It would be most interesting if reliable figures could be obtained as to the extent of building operations, but Health Officers are notably deficient in such information.

ANNUAL REPORTS OF MEDICAL OFFICERS.

Let me repeat the suggestion contained in my 1919 report that the Provincial Board supply Health Officers with an outline setting forth the material which it will be incumbent on them to supply in their annual reports. The Health Officers should be given plenty of latitude in matters of local importance but his annual reports are required to be greatly changed if they are to fill the important purpose intended by the Department and if they are to be of value to the neighbouring communities who are working too much in isolation. In this way data can be collected upon which may be based legislative changes. I would suggest that a request be made for the number of houses built and that a report of the investigations into the source of every communicable disease be asked for.

Respectfully submitted,

W. EGERTON GEORGE,
District Officer of Health.

City Hall, Fort William, Ontario,
February 20th, 1922.

ANNUAL REPORT FOR 1921 OF DISTRICT No. 7.

Subject:—"*Annual Report for* 1921.".

Sir:—

I have the honour to submit herewith my report of work done in District No. 7, during the year 1921:—

Conference.—During the months of February and November, I attended special Conferences held at the Toronto offices of the Provincial Board. Periodic conferences at Headquarters are extremely useful, to Officials who are out in the field during the entire year. The peculiar needs and conditions prevailing in Northern Ontario would appear to justify the holding of Conferences for Officials from Districts 6, 7 and 8, separate from those conferences for Officials from the Districts in the older parts of the Province.

On May 16th and 17th I attended the Annual Meeting of the Ontario Health Officers' Association. This meeting was held in Toronto in conjunction with the Annual Meeting of the Canadian Public Health Association, Canadian National Council for Combating Venereal Diseases and the Canadian Association for the Prevention of Tuberculosis. Six local medical officers of health from District No. 7 attended and registered at the Annual Meeting. As the majority of the municipalities in the District are from eight hundred to a thousand miles from Toronto, this was a very creditable representation from the District.

Cemetery Inspections.—I was notified by the Chief Officer of Health that the inspection of cemeteries had been added to the District Officers' duties; and I endeavoured to complete this work in all municipalities. Forty-five cemeteries were inspected during the year, including one cemetery in a township without municipal organization. Completed Schedules of Information re cemeteries in every municipality but one in District No. 7, were sent to the Provincial Board. Six written notices were sent to the owners of cemeteries, pointing out necessary improvements.

Industrial Hygiene Surveys.—The following surveys of Pulp and Paper Mills and Plants were completed; and reports were sent to the Industrial Hygiene Division of the Provincial Board:—

(1) Nipigon Fibre & Paper Mills, Limited, Nipigon, Ontario. Date of survey: August 22nd. Date of report: August 23rd.

(2) Dryden Paper Co., Limited, Dryden, Ontario. Dates of survey: August 26th and 27th. Date of report: September 3rd.

(3) Fort Frances Pulp & Paper Co., Fort Frances, Ontario. Date of survey: September 23rd. Date of report: October 14th.

Routine Sanitary Inspections.—Routine sanitary inspections were carried on in fifteen municipalities: and reports were submitted to the Provincial Board as follows:—

Municipality	Dates of Inspections	Dates of Rept's
(1) Port Arthur	March 23rd to April 8th	April 15 & 18th.
(2) Shuniah	June 29th & July 6th	July 4th & 15th.
(3) Schreiber	August 4th	August 5th.
(4) Emo (5) Lavelle (6) Chappele	August 11th to 13th	August 16th.
(7) Dryden (8) Van Horne	August 25 to 28th	September 6th.
(9) Kenora	August 28th to 31st	September 7th.
(10) Keewatin	August 31st	September 7th.
(11) Ignace	September 15th	September 19th
(12) Fort Frances	September 21st to 25th	October 4th.
(13) Rainy River Tn.	September 25th to 28th	October 6th.
(14) Morley	September 27th	October 7th.
(15) Sioux Lookout	September 28th to October 1st	October 7th.

In each municipality I was accompanied by the local M.O.H., or Sanitary Inspector; and wherever possible I met the local Boards of Health.

In the City of Fort William I inspected—between April 25th and May 12th—the City Abattoir, City Incinerator, "Coal-Dock Area," and seven Dairies. I was accompanied on these visits by the local Sanitary Inspector.

Special Visits and Inspections.—Ten special visits and inspections were made during the year; and reports were submitted to the Provincial Board, as follows:—

Community.	Dates of Inspections.	Dates of Reports.
(1) Stratton	April 19th	April 22nd.
(2) Fort Frances	April 20th	April 22nd.
(3) Atikokan	April 20th	April 22nd.
(4) Nipigon	May 31st to June 1st	June 3rd.
(5) Sand Point (Indian Reserve)	June 15th	June 17th.
(6) Macdiarmid (Thunder Bay District).	June 15th	June 20th.
(8) Ontario Government Road Camps. (Thunder Bxy District).	July 18th and 19th	July 20th.
(9) Nipigon and Cameron Falls	July 16th	July 21st.
(10) Kenora, Keewatin, Rainy River Town, Fort Frances, Port Arthur	October 17th to 22nd	October 28th.

Dairies.—Twenty-seven dairies—including three pasteurizing plants—were inspected as follows:—

Port Arthur	5	(including one pasteurizing plant.)
Fort William	7	" " " "
Kenora	11	" " " "
Keewatin	1	
Fort Frances	2	
Schreiber	1	

The equipment varied to a considerable degree; but not to the same extent as the sanitary conditions. Local health authorities should require a more rigid observance of sanitary regulations; but it is doubtful if inspection alone will guarantee milk of the highest standard of purity.

In the larger communities municipal milk depots and pasteurizing plants—if properly equipped and operated intelligently—may be productive of a safe milk supply. However, I would say that, in the three pasteurizing plants inspected, I could find nothing to prove by mechanical means that any particular batch of milk was effectively pasteurized and subsequently cooled to the proper temperature at which it should be maintained until delivered to the consumer. I would recommend that it be made illegal for any person or company operating a dairy to advertise pasteurized milk unless the particular apparatus and process has been efficiently endorsed by the local Board of Health of the municipality after inspection of same: and unless the Officials of the local Board of Health shall have sole access to the recording apparatus and time-clocks in connection with the pasteurizing plant. I would further recommend that it be made illegal to offer for sale pasteurized milk unless every bottle of this milk be labelled as such, stating the degree of heat and the length of time: and the date on which the process was done.

Water Supplies.—I have continued the policy of encouraging local health authorities to maintain stricter supervision over municipal water supplies. During 1921 390 water samples were examined bacteriologically in the Provincial Laboratory at Fort William; and practically all samples were from municipalities in District No. 7. This is a very gratifying increase over the previous year when 53 samples were examined.

On May 31st and June 1st, I inspected the watershed from which the supply is obtained for the Village of Nipigon. This water supply was found to be subject to gross pollution; and I recommended in my report of June 3rd, that the Provincial Board send a Sanitary Engineer to look over the local situation. On July 16th, Mr. G. A. H. Burn, from the Sanitary Engineering Division, visited Nipigon and Cameron Falls. It is imperative that pressure be brought to bear upon the Municipality of Nipigon to ensure a safe water supply for the village.

During the summer months I visited the summer resorts of "Loon Lake" and "Amethyst Harbour," in the Municipality of Shuniah. I was accompanied by the local M.O.H., Dr. C. N. Laurie, and by Mr W. C. Miller, Provincial Sanitary Inspector. Mr. Millar also visited the "Silver Islet" summer resort in the unorganized Township of Sibley. Bacteriological examinations of water samples from the three summer resorts have demonstrated the necessity for stricter supervision over all water supplies at places of this nature.

On August 4th—when making an inspection at Schreiber—I suggested to Dr. H. S. Crowe, M.O.H., that the local Board of Health carry on a sanitary survey of all wells, cess-pools and pit closets in the municipality. Between August 17th and November 30th the M.O.H., and Sanitary Inspector collected sixty-eight water-samples from wells in Schreiber. These samples were examined bacteriologically in the Provincial Board's Laboratory at Fort William.

Water Chlorination.—During the months of January, February and March, tap-samples of presumably chlorinated water from the Port Arthur Municipal supply were found to be dangerously polluted with Colon Bacilli. On investigation it was discovered that the dosage of chlorine was being delivered at a figure far below that previously recommended by the chemist in charge of the Provincial Board's Experimental Station in Toronto. Dr. C. N. Laurie, M.O.H., immediately ordered that the Chlorine dosage be increased to 0.4 parts available Chlorine per million parts water. Since then no tap-samples from the Port Arthur municipal supply have shown pollution with Colon Baccilli.

Inspections of municipal chlorinating plants in the towns of Kenora, Rainy River and Fort Frances had given rise to doubt as to the efficiency of the processes employed. Bacteriological examinations of presumably chlorinated water from each town had almost invariably indicated pollution with Colon Bacilli: and I recommended that the Provincial Board send a Sanitary Engineer to investigate the conditions. Between October 17th, and 22nd inclusive, I accompanied Mr. A. E. Berry, Assistant Provincial Sanitary Engineer, on visits of inspection to Kenora, Rainy River, Keewatin, Fort Frances, Port Arthur and Fort William. At Kenora, Rainy River and Fort Frances it was found that the chlorinated lime solutions were not being added to the municipal supplies in sufficient amounts to render the waters safe for human consumption; and at each plant Mr. Berry left written instructions regarding the proper dosage.

Since then the few tap-samples received from Fort Frances and Rainy River have shown little or no improvement; between October 17th and December 31st. no tap-samples have been received from Kenora. I would recommend that the Provincial Board of Health make it compulsory for all municipalities—where chorinating plants are in operation—in District No. 7, to send tap-samples to the Provincial Board's Branch Laboratory in Fort William at least twice weekly throughout the entire year. Municipalities should be compelled to operate water-purification plants in such a manner that the "purified" water is at all times free from Colon Bacilli.

Sewage Disposal.—In Port Arthur, Fort William, Fort Frances and Kenora municipal sewage systems are in operation without any treatment of the sewage previous to discharging it directly into nearby waters. Most of these waters are the sources of municipal water-supplies; but economic consideration will apparently operate for some considerable time against any attempt to remedy these unsatisfactory conditions. However, as population increases, the problems of sewage disposal in these communities must become more pressing, and their ultimate solution cannot be indefinitely postponed.

Night Soil.—During the year some municipalities disposed of night-soil in a fairly efficient manner. In other communities the same care was not exercised; and the resulting conditions constituted a menace to health. However, local health officials have generally been willing and anxious to comply with any suggestions.

Communicable Diseases.—The following lists were compiled from the returns sent to this office from the Provincial Board of Health as received during the year 1921, from Secretaries of local Boards of Health, in District No. 7:—

Disease	Municipality	Cases	Deaths
(1) Smallpox	Dilke	4	0
	Emo	4	0
	Lavallee	6	0
	Fort Frances	1	0
	Kenora	3	0
	Fort William	8	0
	Port Arthur	1	0
	Total	27	0
(2) Scarlet Fever	Emo	14	0
	Fort Frances	3	0
	Keewatin	1	0
	Kenora	17	1
	Sioux Lookout	1	0
	Paipoonge	4	0
	Shuniah	2	0
	Schreiber	3	0
	Fort William	133	4
	Port Arthur	43	0
	Total	221	5

Disease.	Municipality.	Cases.	Deaths.
(3) Diphtheria	Rainy River Town	15	1
	Dilke	1	0
	Morley	12	2
	Emo	5	1
	Keewatin	4	0
	Kenora	4	1
	Sioux Lookout	4	0
	Shuniah	5	1
	Fort William	54	2
	Port Arthur	21	1
	Total	125	9
(4) Measles	Fort William	24	1
	Port Arthur	30	0
	Total	54	1
(5) Whooping Cough	Emo	2	0
	Schreiber	23	0
	Fort William	95	2
	Port Arthur	32	0
	Total	125	2
(6) Typhoid Fever	Rainy River Town	5	1
	Emo	1	0
	Fort Frances	1	0
	Keewatin	1	0
	Kenora	2	0
	Paipoonge	2	0
	Fort William	10	0
	Total	22	1
(7) Tuberculosis	Kenora	2	1
	Fort William	15	6
	Port Arthur	3	6
	Total	20	13
(8) Infantile Paralysis	Fort William	6	1
	Port Arthur	4	0
	Total	10	1
(9) Meningitis	Port Arthur	0	1
	Total	0	1
(10) Influenza	Schreiber	62	0
	Fort William	0	1
	Port Arthur	0	1
	Total	62	2
(11) Influenzal Pneumonia	Schreiber	1	0
	Total	1	0

Disease.	Municipality.	Cases.	Deaths.
(12) Acute Primary Pneumonia	Fort William	55	9
	Port Arthur	1	0
	Total	56	9
(13) Bronchial Pneumonia	Paipoonge	1	0
	Total	1	0
(14) Mumps	Fort Frances	19	0
	Shuniah	1	0
	Port Arthur	62	0
	Total	82	0
(15) Chicken Pox	Fort Frances	2	0
	Kenora	2	0
	Shuniah	10	0
	Schreiber	6	0
	Port Arthur	42	0
	Total	62	0
(16) Erysipelas	Schreiber	1	0
	Port Arthur	2	0
	Total	3	0

A small outbreak of Smallpox occurred during the Spring in Emo and Lavallee Municipalities in the District of Rainy River. The infection evidently came from the State of Minnesota; and the disease was kept well under control by the local officials. During the Spring four cases of Smallpox occurred in the Municipality of Dilke, in the District of Rainy River; and three cases occurred in the Town of Kenora. In the case of both municipalities the original infection was traced to a lumber camp near the south end of the Lake-of-the-Woods. In the City of Fort William during the month of July three cases of Smallpox were taken from the C.P.R. S.S. "Keewatin;" but the disease was kept well under control in that city.

Scarlet Fever cases have shown a distinct decrease, particularly in Fort William where the disease persisted in epidemic form during a period of three years.

In the Municipality of Morley and the Town of Rainy River outbreaks of Diphtheria occurred during the late Summer and in the Fall. Three deaths were reported; but the disease has since been brought under control.

Reports in connection with Measles show that we have been free from epidemics similar to those in Fort William and Port Arthur during 1920.

A number of cases of Typhoid Fever have been reported from Rainy River Town; and isolated cases have been reported from other points on the Canadian portion of the watershed of the Rainy River.

The origin of infection was evidently rural in most cases of Typhoid Fever occurring in the City of Fort William; and no case of Typhoid Fever in Fort William could be attributed to infection from the City Water supply.

A Sanatorium for cases of Tuberculosis is an urgent necessity in District No. 7. Even if available for advanced cases only, the main source of infection could be removed from homes where skilled attention would be out of the question financially.

During the year the following visits were made in connection with Communicable Diseases:—

Community	Dates of Visits.	Disease.	Dates of Reports
(1) Quibell (Unorganized)	January 19th to 22nd	Scarlet Fever	January 24th.
(2) Dorion “	March 2nd	Whooping Cough	March 3rd
(3) Jackfish “	March 12th to 13th	Smallpox	March 16th.
(4) Emo	April 19th	Smallpox	April 22nd.
(5) Cloud Bay	September 17th	Typhoid Fever.	Nil.

Venereal Diseases.—On July 11th-13th I visited the “Sand Point” Indian Reserve, on the shore of Lake Nipigon, where I obtained sixteen blood samples for Wassermann test. A report, dated July 15th, was sent to the Provincial Board.

On September 1st, a clinic for the treatment of Venereal Diseases was established at the McKellar General Hospital in Fort William. This clinic is under the auspices of the local Boards of Health of Fort William and Port Arthur; and it is intended to serve the north-western part of the Province. Skilled treatment for venereal disease is now available absolutely free of charge for all patients who are unable to pay for the services of a private physician.

Public Health Nursing.—Miss Carr Harris and Miss Whitworth have continued public health nursing demonstrations at (1) Kenora; (2) Emo and Lavallee; (3) Schreiber, Nipigon and Cameron Falls. Miss Carr Harris has recommended that a Provincial Public Health Nurse be appointed for the summer months in each of the four Agricultural areas. During seven months of the year it is practically impossible for a nurse to carry on an effective public health demonstration at points removed from the railway in the rural municipalities of this District. If public health nursing demonstrations are to be put on in the rural districts within a reasonable time, it will be necessary to provide additional nurses during the months when this work can be made effective; and I would recommend that Miss Carr Harris’ suggestion be followed:—“that a Provincial Public Health Nurse be appointed during five months of the year in each of the four Agricultural Areas of District No. 7.”

Public Health Laboratory.—This important health work has been carried on during the year by Dr. N. O. Thomas, the competent Director of the Provincial Board’s Branch Laboratory at Fort William. Dr. Thomas, with one assistant, has done all the laboratory work; but it is evident that additional assistance must soon be provided if the Laboratory is to cope with the ever-increasing demands that are being made upon it.

Annual Reports from Local Boards of Health.—I have received duplicates of the Annual Reports for 1921, from twenty-eight of the thirty-one local boards of health in District No. 7. This has been most gratifying as indicating the interest shown by the Secretaries in getting out their annual reports.

Provincial Sanitary Inspector.—During the year Mr. W. C. Millar took over from Mr. McKee the duties of Provincial Sanitary Inspector in District No. 7, Mr. McKee being moved to North Bay. Mr. Millar has on many occasions proved of invaluable assistance; and I believe that the most logical division of the routine sanitary work is that which allows the District Officer to give his attention to sanitary matters affecting municipalities, while the Provincial Sanitary Inspector deals with sanitary questions in territory without municipal organization.

Unorganized Territory.—According to literature printed in 1920, there are approximately eighty (80) townships appropriated for agricultural purposes and open for settlement in the Districts of Thunder Bay, Rainy River and Kenora. Approximately forty-three (43) of these townships are without municipal organization, and they possess no local health machinery such as exists in the thirty-one (31) municipalities in District No. 7. As settlement can only proceed in townships appropriated for agricultural purposes and open for settlement; and as these partly-settled unorganized townships are in fairly compact groups within reach of existing municipalities, some means can surely be found whereby certain local medical officers of health may be appointed (and paid) by the Department to act as local medical officers of health over groups of unorganized townships within reach of the municipalities at present under their jurisdiction. It is of the utmost importance that provision be made for local health supervision in partly settled townships where there is little probability of municipal organization in the immediate future. It is physically impossible for one official to perform effectively the duties of local M.O.H. throughout the entire extent of unorganized territory in the District; and at the same time to carry on efficiently in connection with the municipalities his duties as District Officer of Health.

Sanitary Inspection of Schools in Unorganized Territory.—The Provincial Board requires each local M.O.H. to make an annual sanitary inspection of every school in the municipalities under his jurisdiction, and to report to the Provincial Board the result of each inspection. According to the 1920 list of public and separate schools there are (in District No. 7.) approximately sixty to seventy-three school sections in territory without municipal organization: and where schools are open in these school sections they are not subject to inspection by any local M.O.H. I would recommend that the School Board of each school in territory without municipal organization be required once yearly to employ a legally qualified medical practitioner to make a sanitary inspection of the school and school premises, and to send to the Provincial Board a report of each inspection.

I have the honour to be, Sir, your obedient servant,

G. L. Sparks,
District Officer of Health.
District No. 7.

ANNUAL REPORT FOR 1921 OF DISTRICT No. 8.

DR. J. W. S. MCCULLOUGH,
Chief Officer of Health,
Spadina House, Toronto.

Sir:

I beg to submit herewith annual report of Public Health work accomplished in this District for the year 1921.

District Number 8 comprises the judicial Districts of Algoma, Manitoulin and that part of Sudbury lying West of a line North and South through the West boundary of Township Number 59 on the South. This District was formed by taking Algoma and Manitoulin from District Number 7, and part of Sudbury from District No. 6, it having been found impossible for the District Officer of Health to cover the enormous territory formerly assigned to Districts Nos. 6 and 7. District No. 8 covers a section extending over 500 miles in which the District Officer's duties require his attention.

This new Health District was taken over on the first of the year 1921, with headquarters at Sault Ste. Marie. Offices were opened and furnished in the Beck Block and are also occupied by the Provincial Sanitary Inspector assigned to the adjoining territory. The Provincial Health Nurses also use this office as a central point from which to carry on their Public Health and Maternal and Child Welfare demonstrations throughout the District.

For carrying on any active Public Health propaganda it was necessary first to cover the District and to meet the physicians and Municipal authorities and the unofficial organizations interested in Public Health work. A considerable amount of time was spent in this way, where it is not possible to tabulate even approximate results. During the year it was possible to visit each Municipality in the area, and to meet all physicians holding appointment as M.O.H. in the forty Municipalities of the District.

Dairy Inspection.

During the Spring and early Summer and again in the late Fall about the time cattle were being stabled for the Winter, some sixty dairies supplying milk to the City of Sault Ste. Marie were inspected. Part of the milk supply is shipped by rail from points up to sixty miles distant. These shippers send their whole supply to a central distributor where pasteurization takes place before being delivered. Each shipper's supply is tested regularly for sediment and also regularly, though less frequently, samples are sent to the Provincial Laboratory for butter fat tests and a bacterial account is made. The supply shows good average tests for butter fat, but frequently the sediment test indicates the need for a decided improvement in methods of production.

Inspection of the dairy farms shows quite clearly the source of the dirt found. Except for a month or six weeks in the early summer the total supply of milk available for the city is not sufficient to meet the requirements of the public. It has therefore been difficult to force immediate compliance with the suggestions made as to improvements in methods of handling, particularly when such improvement means expense to the producer. Considerable general improvement, however, can be noticed after pointing out defects and offering suggestions as to better equipment and methods. As competition becomes stronger, it will be less difficult to secure co-operation in an effort to improve this supply.

The other part of the City's supply (about one-half) comes from those farms that are situated near enough for daily delivery by the individual producer. This supply is not pasteurized, but has the advantage of being delivered without the delay to which the supply from a distance must be subject before reaching the customer. In the case of two dairymen delivering directly to the city, after conferring with the M. O. H., it was considered necessary to shut off the supply until such time as improvements in methods and equipment were made. In one case the dairyman sold his stock and went out of business; in the other case the result of the action taken was that an excellent equipment was installed and the dairyman was producing a good supply under good conditions.

In the Spring of the year a beginning was made at gathering information regarding possible conditions affecting health in the manufacture of iron and steel.

A preliminary survey was made of the Algoma Steel Plant before attending a conference on Industry of Health conditions which conference was called by Dr. Cunningham, and was attended by all District Officers. It was not found possible to follow this investigation further than to see the method employed in conducting the Welfare stations, Sanitary Organizations and the methods employed in carrying on a most thorough and energetic "Safety" campaign. This "Safety" campaign was most interesting and stressed particularly the personal element, showing the "man" to be more liable to cause accident than the "machine."

Within the first three or four months of the campaign the operations were able to show a decrease of 75% in the incidence of accident, and a greater reduction still in the loss of time due to accident.

Cemetery Inspection.

Under date of May 31, 1921, the duties of Cemetery Inspector were added to those of District Officer of Health. In this District the time required to locate, inspect and report on 73 cemeteries had to be taken from time which it is considered could be more profitably spent in actual Public Health and Welfare work. In some instances it was possible to make these inspections in conjunction with other work in the more distant sections of the District, but as it was possible to make inspections only in the Summer, it was necessary in a large measure, to set aside a large portion of other activities which also require attention during the Summer months. This applies particularly to rural parts and settlements not convenient to the Railroad.

Communicable Diseases.

Communicable diseases in organized Municipalities have been officially reported in this District as follows:

Smallpox	37
Scarlet Fever	78
Diphtheria	121
Measles	4
Whooping Cough	10
Typhoid Fever	1

Of these cases seven deaths were reported due to Diphtheria and one due to Typhoid Fever. Figures not being available for previous years, it is not possible to make comparison of relative prevalence.

The regulations regarding reporting of communicable diseases from parts of the District outside the incorporated Municipalities have not been sufficiently complied with to have reliable data available to cover these areas.

In many cases physicians are not called until the death has to be registered, and it is difficult to ascertain even the approximate number of cases.

During the year there have been the following epidemics:

SMALLPOX

Aberdeen and surrounding Townships.

Epidemic began in the latter part of 1920. About 75 cases in all came to the attention of Mr. Taylor, Provincial Sanitary Inspector, who had charge of enforcement of quarantine regulations. General vaccination and thorough investigation of contacts cleared up the situation rapidly once it was located.

Sault Ste. Marie.

Approximately 35 cases in the city and neighborhood during January and February. Thorough vaccination in the schools helped to rapidly terminate the epidemic.

DIPHTHERIA.

Prevalent throughout the District in the latter part of the year, appearing in isolated places in a very acute form. The history in a number of instances pointed to a mild epidemic, only one or two families developed a virulent type.

TYPHOID FEVER.

At Gogama on the C.N.R. there were some 15 cases of Typhoid Fever with five deaths during the summer months. The epidemic resulted from unsanitary camp conditions and was evidently spread by flies.

During the year other conditions not referred to above required an investigation owing to complaints or requests for assistance in control of Communicable Disease, or improving sanitary conditions.

Desbarats.
    Two visits in connection with Diphtheria epidemic.

Richard's Landing.
    Drainage and water supply.

Chapleau.
    Garbage collections and general unsanitary conditions.

Biscotasing.
    Suspect of smallpox.

Searchmont.
    Diphtheria outbreak.

Cloudslee.
    Diphtheria outbreak.

Spanish Station and Walford.
    Scarlet Fever epidemic.

Franz.
    Diphtheria epidemic.

Cockburn Island.
    Difficulty of securing medical attention owing to distance, and special difficulty of transportation during winter season.

Little Current.
    Water supply and pollution of same by drainage from cess pools.

Nestorville.
    Unsanitary conditions surrounding the plant of the Bishop Lumber Co.

Gordon Lake.
    Smallpox quarantine.

Provincial Laboratory.

The establishment of a Provincial Laboratory in Sault Ste. Marie has provided excellent service for this District. The physicians have repeatedly called attention to the improvement and convenience of the service. During the acute outbreak of Diphtheria, special benefits were evident in detecting carriers and providing information for the release from quarantine. In the country, as well as in the city, it was possible to have swabs taken from the pupils of a whole school or a whole class, and early reports obtained. By this means, carriers were detected and isolated, and it is possible to allow the schools to remain in operation, where otherwise it would probably have been necessary to close these schools in order to control the spread of the disease.

Maternal and Child Welfare Work.

I have been able to co-operate with the Public Health Nurses in Maternal and Child Welfare demonstrations in some twenty Municipalities where they have been working during the year.

This co-operation has been given by attending and assisting in the examination of school children and in clinics where local physicians were not available, and by attending Public meetings, and meeting the Municipal Councils of the Municipalities and talking to them on various phases of the work.

In only one Municipality was it possible to have a permanent nurse appointed as a result of these demonstrations. In the Town of Blind River where this appointment was made, the work has been successfully carried on. The nurse appointed has been able to carry her work into almost every home of the community where there are children, and in addition social and relief work has been accomplished under her direction.

Maternal and Child Welfare work is everywhere thoroughly appreciated, but the Municipalities have hesitated to assume the necessary expense required to support a full time nurse while Municipal financing is so difficult. The success of the demonstration work, however, has been quite apparent in the increased interest in welfare and the actual benefits derived from Public Clinics, Home Nursing Classes and actual bed-side nursing where such has been possible.

Maternal and Child Welfare service that has been carried on in unorganized Districts has also been very thoroughly appreciated in the more isolated settlements, and the benefits have been thoroughly demonstrated.

A permanent Government service for providing assistance and carrying on Health Education would be acceptable, and could in many cases relieve actual suffering and save lives as well as promote a general improvement in living conditions.

The main effort in Public Health has previously been placed in the control of contagious disease and in sanitary improvement. The branch of Maternal and Child Welfare is gaining recognition rapidly and is perhaps now the most active and the most successful effort being carried on.

There is, however, a link in the chain of Health activities which, in the rural sections particularly, is receiving less attention than it should be. Work in Public schools outside of the large centres, is not sufficiently active. The rural schools and school boards welcome and appreciate the service of demonstrating nurses, but there is no regular provision for follow-up work, and means are not available for providing or assisting in the correction of defects which are found at the time of examination.

This first year's work in District No. 8 has been most satisfactory from the stand-point of the District Officer. There has been no open or active opposition to any of the work attempted. Municipal Councils have welcomed each advance towards organization, and the physicians in the District have co-operated most heartily and have given their time freely in promoting welfare work throughout the community.

With the experience gained in the past year and the better knowledge of the conditions existing throughout the District it should be possible to have more evidence of satisfactory results for the year 1922.

Which report I beg to submit for your approval.

I have the honour to be,
Sir,
H. W. Johnston,
District Officer of Health,
District No. 8.

North Bay, March 20th, 1922.

REPORT TO THE PROVINCIAL BOARD OF HEALTH OF ONTARIO,

From ALEX. R. WHITE, *Provincial Sanitary Inspector*, North Bay, Ontario.

Gentlemen:—

I have the honour to submit, for your consideration, my fifth Annual Report, covering the year 1921, as your Senior Inspector.

The year which has just closed has been without precedent in so far as your lay staff is concerned. From the year 1904, when the late George E. Young was appointed, the Board seems to have wrestled with the multitude of Health problems peculiar to the north country, with the assistance of this one Inspector, as the entire field force. The arguments of the Board, together with the claims of Northern Ontario for a larger staff of Inspectors, seem to have been endorsed by the Government, as we have the appointment of an additional Inspector in 1919, together with the three further appointments which took place during the summer of 1920. We have thus, at the time of writing, a staff of five Sanitary Inspectors and have divided Northern Ontario into five districts. These officials are located at the following places. Mr. Millar, at Fort William, Mr. Taylor at Sault Ste. Marie, Mr. McKee at Sudbury, Mr. Richardson at Cochrane, the fifth office being the original Headquarters, namely North Bay.

During the years of study which we have given Public Health work, two things have been vitally necessary if reasonable progress was to be expected. These have been, an increased staff of Inspectors in order that system could be applied and, secondly, to standardize our work in order that the same principles be put into force by each official, thus providing uniformity and consistency.

Both of these matters have now been provided. Our field is now well manned and our laws have been revised admitting and providing for reasonable standards, and as these have been operative for some nine months, it should be of very con-considerable interest to see how these new conditions have been viewed by the Public, and by Capital and Labour, and to note the gains made by an increased margin of safety and by the betterment of housing conditions. In order to show this clearly, I am consolidating the reports of our five Inspectors, but before so doing I wish to make a brief report on my own district, which comprises the Timber Agencies of North Bay, Parry Sound, Renfrew (or Arnprior), Peterboro, with part of New Liskeard, and to show as clearly as possible how my time has been spent.

Information given us by the various Timber Agents throughout my district gives a total of sixty-eight companies operating during the current season. These concerns operate 170 camps and employ 8,025 men. (It should be here noted that all statistics cover the lumbering season only which takes place during the winter. Our season is therefore partly in 1920 and 1921, beginning in September and ending in March or April, depending upon weather conditions.) All other matters dealt with cover the year 1921 only.

While the North Bay District is considerably larger than any of the others, embracing as it does five timber agencies, it is in reality the easiest to work and to supervise. It is the only district in which you have had a resident Inspector for a number of years, and is, and has been, known among lumbermen as the Headquarters for Public Health work as relating to territory without municipal organization. This being the case, it should be supposed the continuous propaganda issued to operators in the surrounding district should have borne fruit. There is another reason, however, worthy of note. In speaking in terms of lumbering there are four distinct branches of this industry. These are:—*Concerns who cut pine lumber, companies who make railroad ties, pulp and paper companies* and *cord wood camps.*

The North Bay District is almost entirely made up of large companies who have large white and red pine holdings, many of whom employ five to six hundred men. These operations are carried on for the most part by company camps employing say an average of eighty men to each camp. The small jobber is present, of course, but not to any great extent. To supervise these large camps, then, is comparatively easy when we have ready access to a wealthy company, as opposed to requiring health reforms at the expense of the small sub-contractor who has had to borrow from the Banks for his very meagre equipment.

The Revised Regulations, which became law in May of 1921, did not reach us in book form until August, with the result that many of the corporations who strike appropriations early for the following winter's work made no provision for the altered conditions and indeed several lumbermen, who practice building camps twelve months ahead of requirements, had buildings constructed before our new standardization took effect. In spite of this, however, I have yet to find a camp constructed this year which does not to a very great extent conform to our new requirements. We have on record, two camps built to conform with our Class A, thirteen camps patterned after Plan B, and one after Class C. I do not wish to have it understood that these new camps are perfect to the last letter of the law, the difference, however, as compared with some of our old hovels, is wonderful and is apparent to both employer and employee.

COMMUNICABLE DISEASES.

I am pleased to be able to say that epidemics of communicable diseases in lumber camps are rare. We have, of course, sporadic outbreaks, but these rarely become alarming, proper co-operation and supervision by the contract Physician, your officials and the company management usually bringing the required result. During the year we have had:—

SMALLPOX AT

J. R. Booth Company, Kiosk	8 cases
Hawkesbury Lumber Company, MacLaren's Bay	3 “
J. R. Booth's camp, Brule Lake	1 “
Spanish River P. & P. Co., Kenney Siding	1 “
	Total 13 cases.

TYPHOID FEVER AT

Spanish River P. & P. Company,	1 case
J. R. Booth, Brule Lake	1 “
J. B. Smith, Chudleigh	1 “
	Total 3 cases.

MUMPS AT

Schroeder Mills & Timber Company, Pakesley	2 cases.

The number of camps visited and inspected by me during the season was sixty-one. I have, of course, covered the whole territory and have seen and dealt with every company and contract physician therein. My new duties, however, as supervisor of field work, prevent my performing as much routine work as during former years. This is a distinct advantage, however, as direction and office work are necessary if system is to be applied.

I see no reason for alarm in the future. I have made short trips with many of the contract physicians to the company camps and am very optimistic for the future.

CONSOLIDATION OF MAIN FEATURES

SHOWING PROGRESS MADE BY DIVISIONAL INSPECTORS.

Lumbering statistics for the season 1921-22, as provided by Crown Timber Agents and covering the entire unorganized territories, show that we have operating 165 companies. These corporations, together with jobbers and sub-jobbers, have a total of 492 camps and employ 22,725 men. (These statistics cover winter cutting camps only.) We have in addition 100 saw mill camps which operate during the summer, as well as a considerable number of mines, but which have not yet been properly tabulated.

It may seem, after renewing our last year's budget of camps, which was 796, that there has been a falling off in this industry, and while this is true in the pulp and paper industry (notably in the Cochrane area) yet the discrepancy exists in practically four companies. Had the three northern paper mills operated as they previously did, the total number of camps would have been substantially the same as last year, which was our Banner Year. The depreciation in our total camps has not lessened our work by any means, for it may be noted we have actually 1000 more men in the woods this year as compared with 1920. This is explained by the large pine companies increasing camp crews, and by constructing larger camps, some of which employ as many as 145 men in one camp. We have therefore a camp budget very similar to that of last year.

NEW CAMPS CONSTRUCTED.

In conformity with the Revised Regulations, delivered to us in August of last year, there have been constructed fifty-seven new camps, twelve in the Cochrane District, seventeen in the Sudbury agency, seven at Port Arthur, five near Sault Ste. Marie, and sixteen in the division of North Bay. It must not be supposed that in the districts of Sault Ste. Marie and Port Arthur, where the smallest number of new camps have been built, your officials have been negligent. Lumber companies have been quick to take advantage of Section Eighteen of our Regulations, giving them the privilege of using old camps already in existence until 1923, with the result that fewer new camps were built last season than at any time within my knowledge.

The group of Inspectors appear to be unanimous in the fact that our Revised Regulations now meet the situation entirely. Indeed, we have on file many letters from contract physicians who state in glowing terms the many advantages of our camp standards. The small sub-contractor is, of course, still the bugbear of lumbering as viewed from an hygienic standpoint. We are, however, correcting this small operator by bringing pressure to bear upon the limit-holder or licensee, who, if determined to log by the jobber method, may construct the necessary buildings and charge the cost back to the contracter, the total cost to be spread over the whole season.

Without question, the next two or three years will see Ontario's great winter industry upon a good sound basis. Our success during the past season has far exceeded my expectations. I can find no serious opposition among lumbermen to our camp standards, and while labour at times demands additions which may be viewed mostly as luxuries, still I find the great mass of employees reasonably well satisfied. Many camp foremen present the argument that in order to keep a clean camp some thought should be given to the personal cleanliness of the men when applying for work. This is good logic, for it must be admitted that an otherwise clean and well ordered camp can easily become infected with pediculi by the introduction of a man who cares nothing for personal cleanliness in himself and in others.

COMMUNICABLE DISEASES.

As stated elsewhere, we are fortunate in that we do not have serious epidemics of communicable diseases, at least in winter camps. This is easily explained when one considers that a camp is usually well isolated and even should there be one thousand men employed, the responsibility rests entirely upon the manager in charge and the contract physician jointly. We are not troubled with the breaking of quarantine laws since one of the first orders we issue is that no men shall be discharged or paid off, without the instructions of your officials. Few men, then, desire to break quarantine and leave behind say three months wages.

My experience inclines me to the belief that at least when smallpox is reported in a large camp, necessitating the vaccination of say one hundred contacts, the contract physician should be accompanied on his initial visit by the District Officer of Health or one of your Inspectors. Looking back over a period of five years, there have been few outbreaks which your Inspectors have not been compelled to finally take hold of and to supervise, but usually after the second and third cases had developed. I see no reason why cases of smallpox, with proper supervision and tact, cannot be confined to the original case. I may go further and say when more cases exist, after the physician has been advised of the first case, and has made his investigation, some one has blundered and the situation should be probed. I have given this matter considerable thought and believe I have discovered the reason for such failures. This I attribute to the failure to vaccinate all contacts. To vaccinate one hundred rough lumber-jacks is a task I find few men able to perform. The failure is not due to lack of knowledge, but rather to the physician's inability to convince through argument the necessity for such prevention. Then again, such a situation often times demands a much greater expenditure of time than the physician is willing to give. I feel, then, the contract physician should be accompanied on his initial trip by one of your legally constituted officers. The mere fact that the law is represented seems to have a most beneficial effect.

In the summer, in operating saw mill camps, our principal trouble is small outbreaks of Typhoid and Dysentery, such as we had at Gogama last summer. We, of course, deal with all buildings owned and controlled by the employer of labour. We would like, however, to have our sphere of usefulness extended to embrace these small towns also. I am often questioned as to our apparent neglect of these mushroom towns, close to the railways, when we are so particular in isolated camps possibly thirty miles from the steel. Generally speaking, such towns and villages are in a most unsanitary and dangerous condition.

The total case record for the year 1921 is as follows:

Smallpox	20 cases.	1 death.
Typhoid fever	7 "	
Scarlet fever	1 "	
Mumps	2 "	
Total	30 cases	1 death.

THE CONTRACT PHYSICIAN.

The contract physician and his connection with the employer of labour and with our Regulations is at the moment of writing the weakest link in the whole chain. I do not mean to infer that it is a case of wilful neglect, but am more inclined to the opinion that this official has not yet come to realize the position which he holds with respect to these companies is as a preventative agent first, and as a curative agent afterwards. Our biggest job now seems to be to instil this thought into the minds of all physicians engaging in such work. We have ample proof of this contention. In a number of instances where we have young doctors specializing in contract work and studying prevention, the camps are much superior to those attended by a city practitioner, who takes up this work as a side issue only and makes few visits to the actual scene of operation. Indeed the few visits this class of physician makes are usually so hurried as to be of little value. I hope the day is not far distant when work such as this will be entirely in the hands of younger, hardy men, who will specialize and who will see the importance of spending the night at each camp employing fifty men or over and who will supply our Board with a monthly report of some value.

The monthly report required by our laws is, save in but few instances, a very poor rendering of such a stewardship. This must be changed now that we have provided a reasonable fee for supervision. I am strongly in favor of suspending physicians who do not report intelligently monthly, or visit the camps as often as required. The industry is much better off without them, to retain them invites disaster.

To sum up the inspections made during the year, I find from divisional inspectors' reports and from my records that 422 camps have been examined, 50 small towns and villages have been inspected, together with many visits made in company with the District Officers to some of the larger towns and cities. Another year should see all camps and saw mills once visited at least. Considerable time was lost in the making of actual inspections during the early part of the winter by reason of propaganda work respecting the Revised Regulations, which cannot be termed time lost.

In conclusion, let me say respecting the field work of our division that the utmost co-operation is shown by the group of Inspectors. The District Officers also are of great assistance to us and are always available for a general discussion and to lend a helping hand. The definition of the Inspectors' duties has done much towards fixing responsibility and is a very decided advantage. I believe your Inspectors have every reason to congratulate themselves upon this first year's work as a responsible group. We are very grateful for the recognition and support accorded us by the Board and for the assistance given us by our director Dr. R. W. Bell. We also wish to thank our chief, Dr. McCullough, for the very liberal support he has always given us and who has made possible the writing of such a report.

Respectfully submitted,
ALEX. R. WHITE,
Senior Provincial Sanitary Inspector.
Sudbury, Ont., March 1st, 1922.

ANNUAL REPORT FROM DISTRICT NO. 6.

North Bay, March 15th, 1922

From JOHN RICHARDSON, Provincial Sanitary Inspector,

To The Provincial Board of Health of Ontario.

Gentlemen:—

I beg to submit herewith, for your consideration, my Annual Report for the year ending December 31st, 1921.

Joining the staff of Inspectors on the 15th of July, 1920, a short time was spent in the North Bay office with a view to obtaining the rudiments of the work to be carried out. In the latter part of August, accompanied by Dr. Cunningham, Director of the Bureau of Industrial Hygiene, Mr. White and I made a tour of the North Country, visiting such places as Cobalt, Iroquois Falls and Kapuskasing, from which point the Doctor returned to Toronto. Mr. White and myself continued our journey west, visiting Minaki, where we inspected the numerous summer resorts on the Winnipeg River, the camps of Simpson & Short located on Pistol Lake. From here we proceeded to Kenora, Fort William and Port Arthur, returning to North Bay by way of Sault Ste. Marie and Sudbury. The object of our visit was mainly an introduction to the country and to meet the heads of the various lumbering concerns and the contracting physicians.

I also accompanied Mr. Taylor on a tour of inspection of lumber camps in the District of Parry Sound and along the main line of the T. & N. O. Railway.

On or about September, 1921, the Board decided to place Inspectors in various portions of the Province. With this arrangement coming into force, it was decided that I should have the supervision of the South Porcupine and Cochrane timber agencies.

LUMBERING STATISTICS.

From the reports of the Crown Timber Agents of South Porcupine and Cochrane the number of companies operating in these sections during the lumbering season, commencing in August and ending in March of each year, gave a return of ten companies with forty-three camps, giving employment to 3,000 men. During the year's work I have made 120 camp inspections.

In regard to the Abitibi Power & Paper Company's woods operations, I was unable to make an inspection of their camps owing to legal proceedings and an agreement between the Provincial Board of Health and the Company, whereby it was agreed that an inspection of their operations would not be made before January 1st, 1921. Owing to the favourable conditions in the Fall and the exceptionally mild winter, all Company and jobber camps closed down on December 28th, 1920. In view of these circumstances an inspection of this Company's woods operations would have been of little or no value, as no action could have been taken.

RE MATTAGAMI PULP & PAPER COMPANY, Smooth Rock Falls.

My inspection of this Company's woods operations showed a little improvement in company camp buildings. The great fault found was a strong tendency to overcrowding in some instances. To a large extent this condition was rectified on my interviewing the management in this respect. The jobber camps showed little or no improvement, the majority being of the usual shack and hovel type so prevalent in recent years.

Re Mining Companies.—During the year I have made numerous inspections of mining camps located in the Porcupine, Kirkland Lake and the Larder Lake Mining Divisions, this being the first time that any of your Inspectors has entered upon this phase of the work. Speaking generally, I find that these camps are of a higher grade than the majority of lumber camps, more attention is paid to the cleanliness of buildings and to the out-side conditions in regard to sanitation.

Summer Camps, Saw-mills and Rossin plants. Owing to the limited market for lumber and a great reduction in the price of pulp wood, only a small number of plants of the above description were in operation. A number of plants were burnt down by the forest fires during the summer. Of ten inspections made, I found that sanitary conditions were not well maintained, averaging thirty men to each plant. These, along with their families, make up a small community. These small villages are often a source of danger, occasional outbreaks of Typhoid fever and Dysentery causing us considerable trouble.

During the year a sweeping revisal of the Regulations was approved of and a much needed reform was introduced, standard plans for bush camps being one of the main features and will, in my opinion, in the course of time, eliminate a great great source of our trouble. With the issuing of these new Regulations, a great deal of propaganda work became necessary, which entailed a great amount of time and travelling to interview the various lumber companies and contract physicians. The time occupied and the valuable work carried out by your Inspectors in this connection, will, I believe, be fully realized during the coming seasons. This has already been verified to some extent this season, as a number of lumber companies have erected camp buildings from the plans supplied in conjunction with the Regulations. Plan B. appears to be the one mostly favoured by the larger operators. The number of camps built according to plans provided was Plan B—9, Plan C—2, Combination Plan—1.

Re Messrs. Morrow & Beatty, Contractors. This Company was engaged throughout the years 1920-21 erecting a dam at Twin Falls, on the Abitibi River seven miles above the town of Iroquois Falls, for additional power to the Abitibi Power & Paper Company's plant at that place. I wish to make a few brief remarks on the sanitary arrangements and cost of same carried out by this firm. The construction camp consisted of twenty-one sleep camps, six cookeries and about forty private houses. Water for domestic purposes was drawn from the Abitibi River. A chlorine apparatus was installed and an average of forty-five thousand gallons of water were treated daily. The garbage was collected daily and disposed of by burning, an incinerator being used for this purpose. The latrines were built of lumber and were fitted with removable boxes, contents and boxes being buried in trenches and the latrines supplied with new boxes. A steam sterilizer was installed capable of sterilizing twenty-five pairs of blankets daily. Ice was supplied by an artificial ice plant, with a daily capacity of two tons. The amount expended on sanitation for the period mentioned amounted to $12,-205.00. Mr. Beatty, who was in charge of the construction work, was at all times willing to discuss the question of sanitation and act on any advice offered. The camp was entirely free from any contagious or infectious disease.

I have also visited the following places:—

Iroquois Falls	2	visits.
Low Bush	1	"
Timmins	2	"
Smooth Rock Falls	3	"
Wye	3	"
Kapuskasing	3	"
Twin Falls	2	"
Total	16	visits.

In connection with communicable diseases I have visited Kenabeek, Osseo, Frederick, Porquois Jct., Matheson, Sturgeon Falls (small pox), Smooth Rock Falls, Kapuskasing (typhoid fever), Latchford (diphtheria). I have also investigated three complaints and settled two disputes.

In the Fall of the year, the contract for the extension of the T. & N. O. Railway, sixty-eight miles north of Cochrane, was let and the tender of Messrs. Grant, Smith & McDonnell of Vancouver and Calgary was accepted by the Commission. This work immediately drew to my attention that a possible source of danger would exist, owing to the fact that the waters of the Abitibi River are being grossly polluted by sewage from the towns of Matheson, Iroquois Falls and the adjacent village of Wye. Meeting the representatives of the company and their physician, Dr. Pettman, at Cochrane, I fully explained the Regulations and the Board's requirements, and also pointed out to them the probable danger from using water from the Abitibi River for domestic purposes. This they fully realized.

RE PHYSICIANS' REPORTS AND CONTRACTS. As requested by the Regulations, these must be forwarded direct by the companies and physicians to our Head Office in Toronto. I often think that this is a mistake, as a much better result would be obtained if each Inspector were allowed to receive these papers in the first instance. All information and data could then be noted. This would enable the Inspector to keep a close check on all companies and physicians who had not fulfilled the requirements of the Regulations. This method would also save considerable expense and time, as I find from my own experience that the Inspector has eventually to make special trips to obtain these documents.

In conclusion I wish to express my sincere thanks to my fellow Inspectors for their co-operation and unfailing support.

Respectfully submitted,

To Provincial Board of Health, Ontario,

From D. S. McKee, Provincial Sanitary Inspector.

I have the honour to submit herewith my first annual report as Sanitary Inspector in your Department. This is covering from 1st July, 1920, up to and for the year ending December 31st, 1921.

In taking over the office as one of your sanitary inspectors, occasioned by the increasing of your staff on July 1st, 1920, working out of the North Bay Office for the first four (4) months, familiarizing myself with the nature of the work in the field, and the usual office routine work, at your instruction proceeding to Fort William, District No. 7, working out of your office there during the lumbering seasons of 1920 and 1921, up to May 1st, 1921, on which date Mr. W. C. Millar took over the Fort William District, and I returned to North Bay, working out of that office until such time as you appointed me to take over your new office in Sudbury District on September 1st, 1921; Sudbury being an important railroad centre, coupled with being the headquarters and centre for the lumbering and mining camps has an advantage for headquarters for a Sanitary Inspector, and a broad field for sanitary work is open in this District.

No. of Camps and other inspections made: During the first eighteen months with your Department I have inspected 152 camps. This is including lumber, mining, and construction camps. Some of these inspected by me were located as far as 31 miles from a railroad which entailed a very long walk or drive through the bush. Coupled with camp work I was compelled to visit 27 small towns and communities in connection with the sanitary conditions and communicable diseases, etc. In most of these small towns or communities the nature of the work demanded a return visit to be made two or three times before the acquired result could be completed.

Mileage travelled: Covering from July 1st, 1920, up to December 31st, 1921, I travelled 23,336 miles in the course of visiting camps and towns, etc. This was almost entirely in Districts Nos. 6 and 7.

Camp Regulations: Your new camp regulations which came into force during 1921, and enforced this season for the first time, are highly approved of by most of the lumber companies in my district, and I feel assured you will have their co-operation in the construction of all new camps along the line of either one of the plans shown therein, outside of camps constructed before our new regulations came into force. All new camps this season were constructed along the lines of your specifications, seventeen new camps in all, with the exception of Mr. J. Carrier's camp at Gogama, who compelled me to take police court action and he was fined $25.00 and costs on each of the two charges. All other new camps were constructed according to your regulations. These new camps are highly appreciated by Lumber companies, and especially employees, who appreciate this higher standard of living conditions in comparison to the unsanitary living conditions in past years, and I feel assured with close supervision and propaganda in this unorganized territory, and continual missionary work in these small towns, mill camps, and bush camps in the course of one or two seasons, the living conditions around these saw-mill camps and lumber camps will be greatly improved, and brought up to near the same standard as their brother workers in the city factories.

Re Contracting Physicians: With reference to the contracting physicians' monthly reports of visits to these camps. I have discussed the matter with each one of the doctors concerned in my District, and I find in each case that it *is not* altogether through neglect a useful monthly report is not forwarded to your Department, but for lack of knowledge of what information is required in this monthly report, and I feel sure if we could have a printed form, both for a medical agreement and monthly reports, this could be filled in on each visit to a Company's camp, and in this way could have more detailed and useful information in your Department.

If you could allow these monthly reports to come through District Sanitary Inspector's Office, much useful information could be gleaned, and more direct action taken where necessary by your Inspector on the field, as it is practically impossible for the Inspector to visit each camp in his District during the lumbering season. Having on hand a record of the physician's report on the sanitary condition and other information, any conditions contrary to the law could be investigated and action taken immediately to have same rectified, thus saving time and delay with the matter. The medical attention given to employees in the camps by the contracting physician this season seems to be much improved and much keener competition between the physicians for this camp work, which eventually will mean better medical service, since our physicians will receive a renumeration from the companies for this work, along with the medical fee from the men monthly.

Inspections of Small Towns and Communities: Since I have been your inspector, I have visited and inspected twenty-seven different small towns and communities, most of these being unorganized and having no Board of Health. I feel sure it will take a considerable amount of propaganda and missionary work to bring the sanitary condition of these small communities up to what we are hoping to achieve in the lumber camps. I feel sure though, if pamphlets and circulars could be distributed freely, and a close sanitary inspection occasionally made, the risks from typhoid and dysentery epidemics would be limited. The importance of excluding bowel and bladder discharges from flies and other sources of infection is not realized by most of the inhabitants in these small communities. As recently as last Fall at Gogama, where one man came in from another town, and developed typhoid, in a very short time after we had two (2) deaths and eighteen (18) cases, developed apparently through the unsanitary conditions and fly contact, which is a very common menace to health in these small communities. I regret having to report in most of these small towns and communities, I find from time to time the sanitary conditions are far below some of our bush camps, which are located as far as 30 miles from a railroad and a considerable amount of time and missionary work will have to be carried out before they come up to the same standard as some of our new camps.

In concluding I would like to point out I firmly believe by having a form printed for all camp contracting physicians, both in the form of a medical contract, and a form for monthly reports, this would give you uniformity and standardize the information you most require and be beneficial to your Department. I have had several monthly reports forwarded to this office from the contracting physicians, with little or no information, other than they had visited Mr. Jones' camps, and perhaps a report of this type, covering two or three companies' camps, and on the same sheet of paper. In each case I returned these reports, advising the physician what information is required, also advising that this report must be forwarded to the Secretary of the Provincial Board, Toronto. If these medical agreements and monthly reports, along with the information stated on Section 1 of the Regulations, be furnished by the companies, if this correspondence could be received by each District Sanitary Inspector for record purposes only, and a file kept, the correspondence could then be passed on immediately to your Head Office, Toronto. This would keep each inspector closely in touch with all operations, etc. in this district, and all corespondence in connection with same up-to-date.

All of which is respectfully submitted,

DAVID MCKEE,
Provincial Sanitary Inspector.

ANNUAL REPORT, DISTRICT NO. 7.

Fort William, March 7th, 1922.

DR. J. W. S. MCCULLOUGH,

Chief Officer of Health for Ontario, Toronto.

Sir,—I have the honour to submit to you my first annual report as your inspector for No. 7 District. I took over the charge of this district on April 1st, 1921, from our Mr. McKee, after having spent five months in the North Bay Office, where I had the opportunity to assist in the stamping out of the smallpox epidemic which raged in Sturgeon Falls in November and December, 1920. This experience, with more along the same line which I had while in North Bay, will be of inestimable value to me, should I be called upon to assist in the same capacity here.

Lumber Camps. Owing to market conditions for lumber and pulp, only about 40% of the usual number of camps are operating this year. There are, in all, about forty companies, having between them around seventy camps. All these camps, with the exception of seven are of the old type and are far from being what the regulations call for, but as, in most cases, they are on their last season in the limits where they are built, I let them be used after necessary improvements were made. The seven new camps referred to were built this year, one of them being built on Class A. plan, and the other six on Class B. plan. (This new style of plan has been very favourably commented upon by lumbermen and their workers.) Two thousand men were engaged in those seventy camps from October, 1921 to March 1922.

Summer Camps. There were eighteen summer mill camps operating in this district during the past season. In most cases these mill camps were in a better sanitary condition than the winter lumber camps. There were eleven hundred men employed in them for five months of 1921.

Government Road Camps. There were five Government road camps operating in this district in the past year, working under the Department of Lands and Forests. These camps were of the poorest type, owing to the inferior material supplied by the Department for their construction. I would strongly recommend that the plan for summer camps, as shown in the new regulations, be strictly enforced in all Provincial Government summer camps, as it is very hard to make a lumberman's foreman understand why he should comply with certain regulations thirty miles in from a railway, after he has spent a summer working in one of the Provincial Government camps in the settled districts, where the regulations were not enforced. There were about one hundred and fifty men engaged in the above camps for five months of 1921.

Hydro-Electric Camp, Hydro (Nipigon). The Hydro Commission had a camp with about six hundred men at Hydro. This camp was built after the Army plan, and was a very good one.

Summer Resorts. There are five summer resorts in this district, patronized by about two thousand people. I made certain recommendations during my visits to these and particularly where extra hazards were apparent in connection with the public water supply, and had considerable satisfaction in seeing my advice being carried out.

Conclusion. During the year several conclusions have been forced upon me, some of which I would like to discuss briefly. The Government Road Camps, reported upon by me several times and mentioned elsewhere in this report, are still far from perfect and while apparently the local superintendent is anxious to please your officials, I feel he has not been given sufficient authority from Headquarters. I would like to insist that these camps be brought up to the same high standard as we have planned for our logging camps.

I also feel that a weekly bulletin of all contracts, reports, etc., as effecting each district, should be sent to each inspector from headquarters. We would then be in a position to deal with delinquents, whether company or physician. To do this it may be necessary to increase your office staff but, even so, system demands that this bulletin be issued during the logging season.

I believe also, if a stock contract, together with a printed physician's report form, were to be supplied, much good would result.

The fixing of responsibility for all camp life upon the Inspector is proving a wise arrangement and is decidedly popular with the employers of labour.

I firmly believe no further contracts should be accepted with physicians whose previous records show indifference and lack of sympathy with our laws and who do not make the necessary monthly reports.

I also believe that the Sanitary Inspector should be given an opportunity to try examinations, leading to the granting of a diploma. Some qualification is necessary, at least for your inspectorate who are looked upon as authorities by local officials. Then again, the fact that we have such qualification would be most convincing during a court procedure.

Inspections Made. During the year I have made one hundred and five sanitary inspections and have travelled roughly eleven thousand miles. I also accompanied Dr. Sparks, D.O.H., on an inspection tour of the towns lying west of Fort William on the Canadian National Railways. I may also say that the District Officer has been of the greatest assistance to me in my work in the District.

Respectfully submitted,

W. C. Millar,

Provincial Sanitary Inspector,

Room 4, City Hall,

Fort William, Ontario.

ANNUAL REPORT, DISTRICT No. 8.

Sault Ste. Marie, Ont. March 13, 1922.

To the Provincial Board of Health, Ontario.

Gentlemen:—

I have the honour to submit the report of the Sanitary Inspection of Lumber camps and unorganized territory for District Number 8.

The year has been given mostly to propaganda and education, as I found on making my visits into the Lumber camps, and unorganized districts, that I was the first official to cover the ground; consequently, regulations and the Health Act, were entirely new to most of the people I met.

Visiting the Lumber camps, I found various propositions; some had contracts with Physicians, but no visits were made to the camp by the Physician; all cases of sickness, if serious, were sent to the hospital or otherwise treated by the foreman or clerk, if any medicine happened to be on hand. In many cases the men purchased patent medicines from the Van, although paying medical fees. It is a 'pleasure to see a decided improvement along these lines; the Physicians now realize that they must make their monthly trips into the camp, and report regularly as required by regulation No. 2. The men also refuse to purchase cough syrups, liniments, etc. from the Van as previously, and I find the supplies of such necessities much improved, and feel sure now the Companies and Physicians are being more closely in touch with the Department we can look forward to great improvements in the operating of Lumber camps and the care of the employees.

One of the most serious propositions I found, and I feel sure the other Inspectors must have had the same difficulty, were the Jobbers. To think of men and young girls living in one building without any privacy was a very strong point with me; in all cases I found thus, I ordered the women's part to be closely screened, and separated from the men. Now that I have covered the ground thoroughly and talked with the Shackers, there is no reason for any such buildings to exist after this season. Our combination plan meets this situation fully and I expect before next Fall this plan of camp will be in general use throughout the District.

The Company camps also require to be altered and additional buildings erected to comply with the regulations. In nearly all cases bunk houses were over crowded, and badly lighted and ventilated, but I find upon interviewing the Officials responsible for the camps, a readiness to comply with the regulations.

Hospitals. This question has been one in which the employees have not had fair treatment. During the past season I have had three cases to handle where the men had been charged Hospital expenses, one case of $35.00, one $10.00 and one $60.00. Evidently it has been a regular practice to collect from the men if at all possible.

Then again, very few camps had any buildings or accommodation to cope with an outbreak of a communicable disease. They are now having some buildings ready to be cleared for use in such cases of emergency.

The new form of contracts we are having signed covers the question more fully and places the responsibility of Hospitals with the Companies.

There is only one way for our Department to improve conditions in the Lumber camps; that is personal visits of the Inspectors into all camps and Shackers engaged in the woods and mines operations. Already I see rivalry amongst

Shackers as to who has the best kept camp. Once we create this spirit amongst the Shackers, cooks and chore boys we will soon improve the sanitary conditions, and the construction of buildings is very easily handled with the Companies.

During the season 1920-21 I had over 200 camps with over 7,000 men. 1921-22 I estimate about 140 camps with nearly 5,000 men employed.

Some of the largest Lumber Companies we have are:

The Searchmont Lumber Co., with four camps. (Closed.)

Bishop Lumber Co., foru camps on the A.C.R. and one in Otto Twp.

Graves & Bigwood with three camps, which did not operate 1921-22.

The Lake Superior Pulp & Paper Co. reduced their cut of pulp wood from 175,000 cords in 1920-21 to 100,000 cords in the season 1921-22. However, the reduction in operations has enabled me to visit the camps and have a personal knowledge of the operations in this District, so that any existing camps that do not at present conform with the regulations may be altered and all new ones built as per required plans before opening another season.

A very serious outbreak of Small Pox was brought to my notice the last week of December 1920, in the Townships of Rose, Plummer, Galbrath, and Aberdeen. This had been running its course for over two months, consequently on making my first tour of inspection there were fifty cases. During January, twenty-five other cases developed. All these with the exception of two were in already infected houses. A thorough inspection of the Townships infected was made and all cases were strictly quarantined with provision made for their requirements. All contacts together with school children, and any residents who wished, were vaccinated with the result that by the end of February the whole epidemic was cleaned up, with only one death.

It was necessary to make many visits and impress upon the people the importance of vaccination as a preventative against the disease. This was brought home to all by the case in Dunn's Valley school where the only child who did not contract the disease was a boy who had emigrated into this country and had previously been vaccinated.

During the summer I made two visits to Manitoulin Island especially to inspect the Fishing Stations and Summer resorts. We need yet to educate the Hotel and boarding house keepers on the importance of sewerage and garbage disposal. Often we find a sewer pipe direct from the building to the nearest stream or lake with a pump for the water supply within a hundred yards. This is a very important item, as many go from the Towns and Cities for the benefit of their health and after returning home develop Typhoid Fever.

Garbage disposal is also very bad, being usually heaped up behind the building and sometimes removed at the end of the season, or lies all Winter until a general clean-up in the Spring takes place, in preparation for the re-opening.

Again, only by personal visits and talks with the proprietors as to the importance of pure water and the elimination of the fly nuisance, can it be expected that Summer visitors may come with safety to their health.

The wayside hotels and boarding houses are a question only just touched upon, and I hope during the coming Summer to give more time to inspection of those premises. Some are very careless regarding the cleaning of beds and rooms, consequently, bed-bugs are carried through the camps by men stopping at those places. So far as I can see, they should, in most cases, be treated as a camp, being used in many cases by the men going to and from the woods.

Dairies. In company with the District Medical Officer, Dr. Johnston, I made several trips around the farms supplying milk to the Cities and Towns. We found very few equipped for the handling of milk; cow-barns are mostly the old type; low ceilings with open floor from the hay-loft above, causing at times a considerable amount of dust. Cows are not thoroughly cleaned, or properly stalled; then again no separate milk house or cooler are provided, consequently the milk is often sour, or partly so before reaching the retailer. We are hoping to see much improvement in the future, as I hear of several farmers making inquiries for equipment.

I gave special attention to the milk supply for Espanola and after having this in hand for some time, this year has seen some results. A central distributing dairy was erected in the Town with all the equipment necessary, excepting the pasteurizer, which I hope to see installed shortly and, instead of peddling the milk in the large cans and measuring out with a dipper, we shall have a regular supply all bottled. The latest tests taken at our branch Laboratory at the Sault show a clean and good milk with a high per cent. of butter fat.

In concluding this review of my work, I must say any results I may have attained have been made possible by the full co-operation of the District Medical Officer, Dr. Johnston, who has at all times been ready to assist me in every way possible. Such co-operation amongst the various officers, in their respective Districts, is the only solution to making Ontario the model Province of the Dominion.

All of which I respectfully submit,

JAMES TAYLOR,
Provincial Sanitary Inspector.

ALLISTON.

His Worship, The Mayor, and Members of the Council of the Town of Alliston.

I hereby beg to submit the annual report of the Board of Health and the Medical Officer of Health for the year 1921.

As you are aware, it has been necessary during the year, to make another appointment of Medical Officer of Health, owing to the death of the former occupant of the office, Dr. J. J. Harper.

I wish briefly to add my tribute to the able and efficient manner in which he conducted the duties of that office, and the great interest which he always exhibited in the general health and sanitary conditions of the town.

During the year 1921, the general condition of the town, so far as communicable diseases are concerned, has been very satisfactory. There have been no epidemics, and, in all, there have been reported 4 cases of smallpox, 1 case of scarlet fever, with a few cases of chickenpox. The cases of smallpox were of a very mild type, and prompt quarantine measures prevented a spread of this disease. This was also helped by the fact that vaccination has been in practice to a very great degree in Alliston, and in no case was the disease contracted by any one who had formerly been vaccinated. This fact alone is a very strong argument in favor of vaccination.

In May, at the request of the Home and School Association the Local Board of Health asked the Provincial Board of Health, to give a public demonstration on Child Welfare. This was given in June 8th, when a Child Welfare clinic was held at the town-hall, presided over by a medical man from Toronto, an expert on infant feeding, assisted by the local medical men. There was also assisting, Miss Vrooman, a Public Health nurse, supplied by the Provincial Board of Health. At this clinic about 30 babies and young children were examined, and the mothers advised as to feeding and treatment. Three other clinics were held by the local medical men, assisted by the nurse, and these clinics were much appreciated by the mothers of the town.

In June, a general medical inspection of the pupils of the Public School was held during several days. This was accomplished through the hearty co-operation of the local medical men, assisted by the nurse, and through the goodwill of the teachers and parents. This examination was very thorough, and much good resulted, as in many instances defects were discovered, which had never been suspected by the parents. This duty was performed by the medical men voluntarily, and at some considerable trouble and loss of time to themselves. As it is for the general good of the community, I would respectfully recommend that they be recompensed in some measure for their trouble, as has been done in former times.

On April 25th, a meeting was called to consider what action should be taken in regard to septic tanks in the town. A motion was passed, asking the Town Council to adopt the Statutory By-law, Schedule "B" Section 115, with such amendments as would be required to suit local conditions. This was afterwards adopted by your Council. An application was made to the Provincial Board of Health, asking them to supply an inspector to inspect the septic tanks and the sanitary conditions in the town, and report to the local Board as to its efficiency. The inspector was sent and after examination reported conditions to be quite satisfactory.

At the present time, a written application must be made to the local Board of Health for permission to construct or to change the construction of septic tanks, accompanied by a full description of the same.

The Board of Health endeavored to draw to the particular attention of the public, the necessity of observing Clauses 2 and 6 By-law 367, amendment to Schedule "B" of the Public Health Act, relating to disposal of sewage and night soil, and insists on the co-operation of the public in carrying out the provisions of this By-law. In conclusion I would state that the public health and sanitary conditions of the town of Alliston are in as good or perhaps a better state than any town in the Province of Ontario.

Respectfully submitted.

J. D. CUNNINGHAM, *M.O.H.*

BARRIE.

BARRIE, Nov. 15th, 1921.

To the Chairman and Members of the Board of Health, Barrie, Ont.

Gentlemen:—

I herewith submit to you my report re sanitary conditions of the Municipality during the year 1921, ending Nov. 15th.

Births	175
Marriages	76
Deaths	112

INFECTIOUS DISEASES REPORTED.

Scarlet Fever	19	Typhoid Fever	5
Diphtheria	24	Tuberculosis	6
Smallpox	1	Measles	4

DEATHS FROM INFECTIOUS DISEASES.

Scarlet Fever	1
Tuberculosis	5

DEATHS OF CHILDREN UNDER ONE YEAR.

Causes:	Premature births	5
	Malnutrition	2
	Difficult birth	2
	Marasmus	1
	Cholera Infantum	1
	Infectious Diarrhœa	2

Upon request of the Women's Institute the Provincial Board of Health sent us Miss Healy, one of their Public Health nurses, to promote maternal and child welfare work. So well was this work received that a Community Nursing Association was formed to give their aid and later funds were raised by them to finance for a successor to Miss Healy. Miss Nodwell, being appointed, has been carrying on the work outlined in a satisfactory manner; also giving special attention to the care of our tubercular patients.

INSPECTION OF SLAUGHTER HOUSES.

These were found in the Spring months to be in an unsanitary condition. Sanitary Inspector F. Smith, by repeated visits and warnings was able to improve matters and bring about a more satisfactory condition.

DAIRIES.

By the courtesy of Dr. Hastings, Medical Officer of Health, Toronto, our Sanitary Inspector was able to study his methods of Pasteurization, Milk Inspection, Sedimentation, test for dirt, testing for butter fat, and in consequence he has been able to do his work in a more efficient manner. During the early summer months milk was delivered to the dairies at a very high temperature, no effort apparently being made to cool same. In consequence the milk quickly soured and had a bad odour. Notification was given to the offending producers and conditions improved forthwith.

The standard of our milk has been raised as regards the increased percentage of butter fat in samples submitted, and in its cleanliness.

THE TOWN'S WATER SUPPLY.

The Town water is absolutely free from contamination of any kind, but all are not privileged to use same. Many wells still exist which may be a menace to health. If by laboratory tests they are found to be contaminated, orders are given for their cleansing or filling up.

SEPTIC TANKS, CESSPOOLS.

Two permits were given for installation of septic tanks where sewer connection could not be had and where the soil was suitable for their proper working. Your Board does not issue permits for the construction of Cesspools and favor the closing of existing ones.

DUMPING GROUND FOR REFUSE.

Weekly inspections of town dumps were made. An incinerator at a small cost was established and is performing the work satisfactorily.

The usual inspections of restaurants, grocery stores, hotels, fruit stores, livery stables, laundries, have been made and reported on from time to time.

Three prosecutions were made under the Health Act during the year.

I must report that I have found the Sanitary Inspector to be faithful and energetic in the discharge of his duties.

I have to thank the Chairman, Secretary and members of the Board for the hearty co-operation in Board of Health work.

In conclusion I would like to make the following recommendations for future consideration:

1. The scientific pasteurization by one plant of all milk sold in the Municipality.
2. Weekly collection of garbage, kitchen waste, ashes etc., as a Municipal service.
3. All restaurants, hotels etc. to have an outfit for sterilization of all dishes and utensils used in the preparation or serving of food, to afford protection against spread of communicable diseases.
4. The permanent employment of a Community Nurse by the Municipality to assist in Board of Health work, maternity, child welfare, social service or other community nursing.
5. A more cleanly delivery of bread, cakes, either by wrapping them, or the wearing of clean gloves by the carrier.

All of which is respectfully submitted,

A. T. LITTLE,
Medical Officer of Health.

Barrie.

BLIND RIVER.

To the Mayor and Alderman, Blind River, Ontario.

GENTLEMEN:—

I have again the honour of submitting the annual Medical Health Report of our town as follows:—

Infectious diseases:—No cases of smallpox, scarlet fever, measles or meningitis came under my notice. There were 2 cases of diphtheria—one last January and one at present isolated in the Hospital, which came from one of the camps north of here. This last case was secured early and cured in 24 hours. The first case had run for five or six days and the case eventually proved fatal, due to paralysis of the heart. During the month of November there were several cases of chicken pox, with no bad results. No cases of typhoid fever during the past year.

Statistics—Births—There were 67 births, 27 male and 40 female. Of the 67, five were cases where the parents were non-residents.

Marriages—Several marriages were recorded here, many being complete outsiders. In 6 of the marriages both contracting parties belonged to the town, and in two instances one party belonged to the town.

Deaths—There were 18 deaths, 9 male and 9 female, in the municipality, eleven less than the year 1920. Of this number 4 were premature births or stillborn babies. Two died of infant troubles, two were drowned, five died of pneumonia, three of heart failure, one of indigestion and one of paralysis of the heart. There were no deaths from infectious diseases.

During the year several complaints of unsanitary conditions were dealt with. Too many people in Blind River still think the public highway is the proper place to throw rubbish and other kitchen refuse.

During the months of May and June I examined all the school children in both schools, with the assistance of Miss Grenville, the Provincial Nurse. Our attention was directed more particularly to the condition of the teeth and throat as well as to personal hygiene, and a report made to the parents. I might add that Miss Grenville spent two months in Blind River visiting the homes, schools and establishing baby clinics. At present we have with us Miss Fortier, who is carrying on similar work. She has visited many homes giving instructions along nursing lines, and is carrying on a Baby Clinic every week with great success. A great deal of enthusiasm has been aroused among the mothers of young babies. Miss Fortier is doing her duties well, but it must be remembered that her principal duty is instructing rather than carrying on active nursing.

I wish to commend very heartily the co-operation of our health officer, Mr. Labbie, who is always willing to assist in preventing unsanitary conditions.

In conclusion I wish to thank the other members of the Board in the person of His Worship The Mayor and our Chairman, Mr. Dyke, for their co-operation during the year.

JOHN M. ROBB.

BRANTFORD

To the Chairman and Members of the Brantford Board of Health.

LADIES AND GENTLEMEN:—

In accordance with Public Health Act, I beg to submit my Annual Report for the year ending October 31st, 1921, upon the sanitary and health conditions of the City of Brantford.

I am glad to report a birth rate of twenty-five per thousand and a death rate of ten per thousand, the lowest in the history of the City.

INFANT MORTALITY.

You will remember that during the year ending October 31st, 1920, we had the lowest infant mortality rate in the history of the City of Brantford—ninety deaths per thousand babies born. That was a tremendous drop from the rate for the year 1918, when one hundred and twenty-eight babies out of every one thousand, died.

For the year ended, we are glad to be able to record a new low record infant mortality rate. Sixty-four deaths per thousand babies born.

The latest available figures for the whole Province of Ontario show that in the year 1920, 72,511 babies were born, 7,802 died before reaching their first birthday, which gives us an infant mortality rate of 107. If the whole Province had the low infant mortality rate which Brantford has, only 4,697 babies would have died, and there would have been a saving of 3,105 infant lives.

The causes of this astonishing reduction in our infant mortality are, I believe, as follows:

1. The fact that Brantford now has a milk supply which for safety and purity cannot be excelled on the Continent. Eighty per cent. of our milk is pasteurized, twenty per cent. comes from cattle which are in process of being tested for tuberculosis, and the whole milk supply has attained a remarkable standard of purity. I firmly believe that in the past, infants have been poisoned wholesale by impure milk. Dr. Cutcliffe's report will show the control which the Health Department maintains over our milk supply.

2. The work of the Social Service Baby Clinic, and the bed-side nursing of maternity cases by the Victorian Order of Nurses, are important factors in reducing our infant mortality. It is educational and practical work of this character which will go on saving lives and still further reduce our rate.

3. The work of the medical profession, unheralded, unnoticed and too often unrecognized, is a potent cause of our reduced infant mortality. There never was a day when the average physician was so well versed in diseases of children, or when so much effort was put forth to save little lives. It is to the medical profession that the public owes the improved health conditions of to-day. It is the medical profession which has directed and unfailingly supported this greatest movement of the century—the conservation of child life.

4. The fact that we have an educated public, for I believe there never was a day when the average parent so well understood the proper way to care for children. There is still an appalling amount of ignorance in the land, but knowledge is easier to obtain than ever before, and it is in spreading this knowledge that the Social Service Baby Clinic is doing its greatest work.

TYPHOID FEVER.

I am sure it will be gratifying to the Board to know that we have had only five cases of typhoid fever during the year. This is a remarkable record, in view of the fact that for the last five years, we have had an average of twenty-six cases of typhoid annually. I attribute this absence of typhoid fever to the steps which we have taken, in consultation with Mr. Fred. Frank, Secretary of the Board of Water Commissioners, of raising the amount of chlorine in the city water. The Water Works officials are now adding .8 parts of chlorine per million parts of water consumed, and I think that we should continue to add this quantity of chlorine until improved preliminary filtration arrangements are provided. We have maintained bacteriological control over the city water throughout the year, and as proof that even the large amount of chlorine now added does not provide absolute safety, it may be mentioned that out of thirty-two bacteriological examinations, in eight instances the presence of Coli. B. was demonstrated.

The Coli. B. is used as an index of water pollution. Its absence is taken to indicate purity. I am of the opinion that it will be necessary in the not distant future to install a modern system of preliminary water filtration.

I am strongly of opinion that bathing at Wilkes Dam should not be permitted and I recommend that the Provincial Board of Health be again approached and requested to declare Wilkes Dam an area within which public bathing should be prohibited.

SMALLPOX.

We have had 214 cases of smallpox during the year, and with one exception, all these cases occurred in individuals who had failed to get vaccinated within the preceding ten years. It will be apparent to all reasonable people that smallpox attacks the unvaccinated and that any community may be free from smallpox if the citizens will get vaccinated every seven years. With the exception of one imported case the City has been free of smallpox for five months. In view of the fact that probably forty per cent. of our population still remains unvaccinated, it would be unreasonable to expect that we will continue to remain free from smallpox, and I earnestly appeal to those who have not done so to get vaccinated and so protect themselves from this frightful disease.

VENEREAL DISEASES.

The Venereal Diseases Clinic at the General Hospital has now been in active operation for six months. The clinic has demonstrated beyond the shadow of a doubt the necessity for this preventive work. During the month of May, the clinic gave seventeen treatments, in June sixty-one; in July one hundred and two; in August one hundred and eighteen; in September one hundred and forty-one; and in October one hundred and forty. Up to date the clinic has not cost the City one cent. The Provincial Government provided $2,000 towards the cost of establishing and maintaining this clinic for the first year. The Government will continue to provide $1,000 per annum towards the maintenance of the clinic, but this will not suffice to run the clinic.

Five of our local physicians have given their services to the clinic, but it would be unreasonable to request them to continue to give their services unless they were offered compensation for their lost time, to say nothing of the great skill and knowledge necessary to successfully conduct such a clinic. The clinic is held three times a week and each clinic requires the services of two physicians for three hours. An appropriation of $1,000 a year from the City along with $500 from the Government grant, would provide a mere honorarium to the devoted physicians who have so loyally initiated this clinic. Unless this is done, I greatly fear it will be found impossible to continue this good work.

Venereal Diseases are the greatest scourge of mankind. The prevalence of these diseases is a grave source of danger and ill-health to the public. The loss of child life is appalling. Ten to thirty-five per cent. of all cases of insanity are due to venereal diseases. Ten per cent. of all blindness is due to venereal diseases. These facts demonstrate the value of this work and from a mere dollars and cents standpoint, this City cannot afford to allow this work to lapse.

The salary of the half-time Social nurse has this year been found out of the Government grant. It is a condition of the continuance of the Government grant that a full time nurse be employed and the work has now grown so big that this will be required in any case.

The prevalence of venereal diseases in Brantford is intimately connected with the drab and dreary lives, the lack of home surroundings and the pinch of poverty which so many of our young girls have to suffer. Nietzsche says, "The mother of debauchery is not joy, but joylessness."

Brantford needs a girls' hostel where the door is not locked at 10 p.m. Such an hostel would in the nature of things have to owe its inception to private enterprise and private benevolence. I would earnestly recommend this idea to those societies in our City which have for their object the improvement of living conditions in our City.

Scarlet Fever and Diphtheria.

We have had one hundred and fourteen cases of scarlet fever during the year, the largest number on record. I am of the opinion that the extent of this disease is due to the mild type of the disease prevailing and the consequent failure of some parents to call in medical aid. It will readily be seen that these missed cases constitute a grave danger to the rest of the community. Fortunately we have had no deaths from scarlet fever

We have had sixty-five cases of diphtheria, with five deaths. This is a decrease from the last two years. There is no disease in which early attention is so important as diphtheria, and I have continually urged the importance of calling in a doctor at the first sign of sore throat.

So-Called Minor Contagion.

Measles and whooping cough are more dangerous than scarlet fever. We have had only twelve cases of measles. Twenty-eight cases of whooping cough were reported. I am convinced there were many unreported cases. For instance there were four deaths from whooping cough and not one of these cases was reported.

School Medical Inspection.

Any resumé of Brantford's Health activities for the year, would be incomplete without a reference to the splendid work which is carried on in our schools by the Medical and Dental Department of the Public School Board. This work is under my supervision as Chief School Medical Officer, and without doubt is a tremendous force for better health in our community. The dental work is carried out by Dr. Cuthbert, and the medical examinations and follow-up work by Dr. C. C. Alexander and his able assistants, the school nurses. The reports of this work are rendered to the Board of Education, under whose authority it is carried on.

TAIL RACE.

The work of filling in the Tail Race east of Erie Avenue is now completed, and the Board of Works are to be congratulated upon ridding the City of this long standing nuisance. I would recommend that the Tail Race between Erie Avenue and the River, be filled in, in the same way. It might take a couple of years to do this work, but it would be well worth the trouble.

RECOMMENDATIONS CONTAINED IN PREVIOUS REPORTS BUT NOT ACTED UPON.

I beg to draw the attention of the Board to the following recommendations which have never been acted upon, and to request that the merits of these proposals be investigated by the City Council.

1. That the Plumbing Inspector be made an official of the Health Department.
2. That a by-law be passed prohibiting the erection of any stable, fish place or chicken coop within fifty feet of a dwelling house.
3. That the unsanitary common drinking cup be prohibited in public places.
4. That public conveniences be provided in such widely separated areas of the City as the North Ward, West Brantford and Bellview.
5. That a motor ambulance be provided the Health Department to transport infectious cases to the hospital.

UNEMPLOYMENT.

The unemployment and hard times which at present exist in our City, will I fear react harmfully towards the health of the City. We cannot hope to continue the good health of this year if these conditions exist for a considerable time. I greatly fear that many children in our City will not receive this winter the same substantial food and covering which their parents were able to provide when employed full time.

I note in our City that dire necessity is forcing many families to move into smaller quarters. Unfortunately we as a Board cannot remedy these conditions, but I am sure we wish success to those agencies which are attempting to alleviate the hardships of this period of unemployment.

In concluding my Report I wish to thank the members of this Department, the staff of the School Medical Inspection System and the Social Service doctors and nurses for the good work they have done, and to congratulate them upon a record health year for the City of Brantford.

The public are beginning to appreciate that the field of preventive medicine is wide, and is capable of producing results out of all proportion to the small amount of money required to carry on such work.

To the members of this Board I desire to gratefully acknowledge the support and valuable assistance which have been freely given to this Department.

I remain,

Your obedient servant,

W. L. Hutton

Medical Officer of Health.

To the Chairman and Members of the Brantford Board of Health.

LADY AND GENTLEMEN:—

I herewith submit for your consideration my First Annual Report since my appointment on full time as Inspector of Foods.

As my appointment to your Board dates from January 1st last, the period covered by this Report is for ten months only. The period from Nov. 1st to Dec. 31st, 1920, was included in my last Annual Report to the Brantford City Council.

Since my appointment attention has been given to the milk supply of the City. The new Milk By-law has been put in operation. The vendors and producers have all been licensed and the Dominion Department of Agriculture have made the preliminary inspection for the purpose of applying the tuberculin test to all herds, the milk from which will be sold raw in the City.

The total number of vendors licensed in the City is six, and one hundred and seven producers. Eleven hundred and sixty-five cows supply a total of seven thousand eight hundred and ninety quarts of milk daily for the supply of the City, or two million eight hundred and seventy-nine thousand eight hundred and fifty quarts, yearly.

In addition forty thousand eight hundred and eighty quarts of cream yearly are supplied retail to the consumer. Approximately eighty per cent. of the milk is pasteurized.

The premises and equipment of the vendors in the City are in good condition and are kept clean and sanitary. The premises of a great many of the producers are all that can be desired. A number of improvements have been made during the past summer at different farms. Such as new milk rooms built, stable yards cleaned and drained, additional light provided in dark stables, small topped pails provided for milking, and various smaller details in the way of repairs attended to.

Vendors and producers have taken kindly any suggestions I have made in regard to improvements and with their co-operation I am able to say that Brantford is receiving a cleaner and better quality of milk than formerly.

Owing to last winter being very mild, very few icehouses were filled and on this account during the extreme hot weather last summer it was impossible to cool the milk at the farms to the proper temperature. As a result milk soured quickly and it is hoped this difficulty will not be met with next summer.

Consumers can assist greatly in having a good milk supply by:

1. Placing milk in a cool place as soon as delivered by the vendor.

2. Keeping it away from other food or articles that may impart an odor or cause it to sour.

3. Returning bottles clean and not using them for any other purpose than to contain milk.

I have had to refuse admittance to the City of milk from three farms on account of a low percentage of butter fat and from one temporarily on account of sickness among the cows. The license of one producer has been suspended on account of dirty conditions at the farm. Three hundred and ninety-two gallons of dirty milk and three hundred and twelve gallons not properly cooled have been returned to the producer. Sediment tests have been made frequently and have been exceedingly valuable in showing the producer the amount of dirt in his milk and the necessity of more care in keeping his cows clean and cleanliness in milking.

A number of producers have provided small topped milk pails and have expressed their surprise at the amount of dirt they prevent from falling into the milk during milking.

Two hundred and eighty-four tests for butter fat have been made, the average result being 3.40%. This is an increase over last year of .23%. This increase represents approximately an increase yearly to the consumers of Brantford of twelve thousand one hundred and forty quarts of cream, the approximate value of which is $7,884.

The following table compiled from records in this office shows the gradual decrease in the quality of milk supplied to the City from the year 1897 to 1920, and the increase during the present year.

Year	Average % butter fat for year per cent.	Percentage of tests below 3% butter fat per cent.
1897	3.96	2.1
1904	3.91	4.
1912	3.65	4.8
1914	3.40	9.7
1918	3.37	9.7
1920	3.17	14.4
1921	3.40	8.54

RESTAURANTS AND BUTCHER SHOPS.

These have been inspected at irregular intervals and are found to be well kept generally. In regard to the restaurants, I am of the opinion that a lavatory should be provided in each for the use of patrons.

Conditions on the local market are better than formerly, but can still be greatly improved. When the new Market By-law is printed and in force, some of the present unsanitary conditions will be removed. But the By-law does not provide shelter and protection to the foods offered for sale, especially meat. Until proper sanitary buildings are provided much disease will no doubt be spread from the dirt from the streets blown onto the foods and from flies also. One thousand and thirty-two pounds of beef, ninety-one pounds of veal, five hundred and eighteen pounds of pork, fifty pounds of mutton, one hundred and forty-three pounds of fish and sixty pounds of butter unfit for food, have been condemned and destroyed.

Your obedient servant,

A. B. Cutcliffe, *Inspector.*

VITAL STATISTICS YEAR ENDING OCTOBER 31ST, 1921.

Population (Assessor's figures)	31,365
Births	804
Birth rate	25.63
Deaths	327
Death rate	10.42
Marriages	313
Infant mortality rate	64.67

COMPARATIVE RATES.

Year	1918	1919	1920	1921
Birth	24	20.36	25.31	25.63
Death	17.7	14.5	12.78	10.42
Infant Mortality	128.6	106.1	90.4	64.67

Notes—

1. Still births were excluded in compiling the above figures.
2. Two deaths that took place outside of the Municipality of Brantford were excluded.
3. No deductions were made of deaths that took place in the B.G.H. where homes were outside the City of Brantford.

DEATHS AT VARIOUS AGE PERIODS.

Still-born	36
Under 1 year	52
1 year and over and under 5 years	13
5 " " " " 15 "	15
15 " " " " 25 "	19
25 " " " " 45 "	35
45 " " " " 65 "	81
65 and over	110
Age not reported	2
Total	327

DEATHS GROUPED ACCORDING TO INTERNATIONAL LIST OF CAUSES.

Group		
Group 1	General diseases	74
2	Nervous system &c.	24
3	Circulatory system	54
4	Respiratory system	43
5	Digestive system	11
6	Genito-urinary system	23
7	Puerperal state	3
8	Skin and cellular	1
9	Bones &c.	0
10	Malformation	5
11	Early infancy	41
12	Old age	19
13	External causes	20
14	Ill defined	9
	Total	327

Our vital statistics would be improved if reports of causes of death were made in accordance with the "international list of causes of death." Such terms as "heart failure" "convulsions" "debility" convey no information. and should not be used. Such terms as "lung trouble" "liver complaint" "indigestion" are too indefinite and should not be used.

Among the specific causes of death (not reportable) are the following:—

Cancer	24
Apoplexy	13
Heart affections	12
Nephritis	9
Old age	19
Pneumonia	31
Bronchitis	7
Premature births	15
External causes	20

STATISTICS OF CONTAGIOUS DISEASES CASES REPORTED YEAR ENDING OCTOBER 31, 1921.

Year	1918	1919	1920	1921
Scarlet fever	38	20	52	114
Diphtheria	44	77	103	65
Typhoid	19	21	19	5
Measles	182	3	249	12
Chickenpox	0	0	29	134
Smallpox	1	14	73	214
Tuberculosis	0	0	12	32
Whooping cough	2	9	51	28
Mumps	0	0	3	189
Cerebro spinal meningitis			1	1
Influenza			366	0
Venereal diseases			48	100
Total	286	144	1056	894

NOTES.

1. We ceased to placard chickenpox June 1st, 1921. It is not proposed to resume placarding unless smallpox breaks out.
2. The policy of allowing smallpox contacts who were vaccinated within the previous seven years to leave the infected house after disinfection to carry on with their work, was approved and adopted by the Board.

DEATHS FROM REPORTABLE DISEASES.

Year	1919	1920	1921
Diphtheria	8	10	5
Typhoid fever	1	1	1
Measles	0	3	1
Whooping cough	2	3	4
Meningitis	4	4	5
Tuberculosis	26	18	19
Influenza	89	34	0
Total	130	73	35

NOTES.

1. Two additional cases of typhoid fever died in the B.G.H. in the year 1921, but the homes were outside of this Municipality.
2. Physicians are not reporting all cases as is required by law. In many instances tuberculosis, whooping cough, meningitis are not known to this office until death takes place. Under these circumstances the Department is unable to take any precautionary or preventive measures.

RECORD OF WORK ACCOMPLISHED.

Water samples examined (70) as follows:—

City water O.K.	24
" " polluted	8
Private wells O.K.	7
" " polluted	21
River O.K. (intake)	1
" polluted	4
Y.M.C.A. swimming tank	5

NOTES.

1. The Y.M.C.A. swimming tank was examined with the idea of making it as safe as possible for the public. While we have not reached the degree of purity we desire, yet as a result of the suggestions given from this office to the Y.M.C.A. authorities, there has been some improvement noted.

2. It is significant to note that of 28 wells examined, 21 were polluted.
3. Where a polluted well was used for human consumption it was closed and city water installed.

Milk samples examined	284
Cream " "	4
(For results see Dr. Cutcliffe's report.)	
Diphtheria swabs examined	346
results—positive 79; negative 267	
T.B. sildes examined	8
results—positive 2; negative 6	
V.D.G. sildes examined	11
results—positive 8; negative 3	
Urine slides examined	20
" for albumen	12
Vaccination office	1,500

HOUSES PLACARDED, FUMIGATED AND RELEASED.

For scarlet fever	104
" diphtheria	60
" measles	12
" chickenpox	95
" smallpox	214

Exclusion notices and release certificates issued to over 1,500 school children.

Notices to abate nuisances (all complied with)	24
Notices to make sewer connection	76
Complied with	37
Number of earth closets inspected	620

All laundries periodically inspected—conditions normal.

All stables periodically inspected—conditions normal.

All alley ways and back lanes frequently inspected—in good condition.

It may be noted that Water and Wharf Streets are particularly improved and the owners of these properties are to be congratulated.

Prosecutions	8
Convictions	7

As usual many hundred complaints have been received and the necessary investigations and adjustments made. These complaints come by phone, personal interview and by letter.

Free bacteriological supplies in the nature of serums, anti toxins and the various test outfits have been kept on hand and given to the medical profession and hospital on request.

Four houses were closed due to being unfit for human habitation. There are many houses that should be closed, but are not, on account of the acute housing shortage.

CARLETON PLACE.

To the Mayor and Council, Carleton Place.

GENTLEMEN:—

Herewith my report as M.O.H. for the year ending Nov. 30th, 1921.

BIRTHS AND DEATHS.

Reports were made of 49 deaths, and 92 births, of which 2 were stillborn. The ages of those who died were as follows:—

6 under the age of 6 months
6 under the age of 9 months
1 under the age of 2 years
1 under the age of 3 years
1 under the age of 13 years
2 between the ages of 20 and 30
2 between the ages of 31 and 40
5 between the ages of 41 and 50
4 between the ages of 51 and 60
6 between the ages of 61 and 70
10 between the ages of 71 and 80
5 between the ages of 81 and 90

Comparison of births and deaths.

year	births	deaths
1920	113 (including 3 stillborn	52
1921	92 (including 2 stillborn)	49

Deaths under one year.

1920	11 deaths in 110 births.
1921	12 deaths in 90 births.

It is my opinion that this death rate could be materially reduced if the Town would secure the services of a District Nurse to teach mothers pre-natal care, and the feeding of children, especially those bottle-fed.

Smallpox	5	cases
Chickenpox	110	"
Scarlet fever	13	"
Typhoid fever	9	"
Diphtheria	1	"
Mumps	75	"
Venereal Diseases	7	"

Many cases of infectious diseases among children were discovered when the children applied for a certificate to attend school after having had chickenpox or mumps.

The smallpox cases occurred as follows:—three in January and two in April, all being contracted from outside sources. Isolation, quarantine, and vaccination prevented the spread of smallpox among children, over 100 of whom were vaccinated in 1921. When the public realizes that vaccination and revaccination are the only means of preventing smallpox, and live up to this knowledge, this disease will disappear.

The thirteen cases of scarlet fever were scattered over the year, and it is my opinion that many of these cases occurred when people, who were in contact with patients before the disease appeared, did not report the fact: due, doubtless, to the fear of quarantine. This carelessness and neglect on the part of such people contributes greatly to the spread of this and other contagious diseases.

At present as far as known the town is free from contagious diseases.

During the month of June, in company with the Sanitary Officer, an inspection was made of the town. Some citizens were found who were not conforming to the act regarding the disposal of manure, thus providing a breeding place for flies, to the detriment of the health of themselves and their fellow-citizens.

The act regarding the keeping of pigs was enforced as far as possible, and some people who got pigs after waiting till the inspection had been completed, were found out and made to conform to the act.

Slaughter houses were inspected and conditions found slightly improved.

MILK.

Dairies were inspected, and orders given to improve sanitary conditions. Many samples of milk were tested for cleanliness. Unfortunately, it has not been possible to compel owners to have their herds tested for tuberculosis. The general opinion seems to be that milk which has a fair amount of cream is pure. Tubercular cattle often give milk which contains plenty of cream, and this milk is often the means of transmitting this disease to children. When the public recognizes this fact we may hope to have this act enforced.

SCHOOLS.

All schools were visited and the sanitary conditions inspected, and as directed by the Provincial Board of Health, a copy of the report was sent to the School Board only to be laid on the table.

As reported last year, the sanitary conditions in our schools leave much to be desired, and if the health of children is worth anything, these conditions should be improved. It is useless to teach hygiene in a school which is a striking example of how a hygienic school should not be built. The outbuildings are filthy, and as a child's acquaintance with infectious diseases generally begins with its school life, is it fair to the child to allow such conditions to exist? Also children of five to six are compelled to stay in a room where artificial light is used most of the day. If the citizens of this town value the health of the children greater than a few dollars, they will insist on improved conditions in our schools.

Cases of impetigo contagiosa and scabies, commonly called swine pox and itch respectively, continue to occur among school children, which could be prevented for the most part by the inspection of school children by a District Nurse already recommended in this report.

CONCLUSION.

The duty of a M.O.H. is, 1st, to suppress and prevent epidemics; 2nd, to save the lives of babies; 3rd, to prolong the lives of adults; 4th, to promote the health and comfort of every body in the community, *but* he is dependent on the response of the public to his appeals to accomplish his work and it is time that the people appreciated the need of this co-operation.

Yours respectfully,
D. H. McINTOSH,
Medical Officer of Health.

CHATHAM

Annual Report for the Year 1921.

To the Chairman and Members of the Board of Health of the City of Chatham.

Gentlemen:—I hereby beg to submit my annual report ending the 30th of November, 1921. During the year we have had several small epidemics of contagious disease as follows:- Typhoid Fever one mild case; its origin could not be traced to any particular source. Of Scarlet Fever we had seventy-four cases reported, affecting fifty-five homes; about twenty per cent. of these were quite severe with either ear or cervical glandual complications. The balance were of a mild type which made the situation all the more difficult to control, as the people have a better chance of hiding or concealing the trouble, and it is few under such conditions, if not quarantined, will be even careful about the spreading, no deaths. Of Measles there were one hundred and ninety two; quite a percentage were a severe type, with one death, that of a child of eighteen months, who was rachitic. One hundred and seventy one homes were placed under quarantine. Chickenpox one hundred and twelve in one hundred and two homes. Smallpox two in one home; no deaths. Tuberculosis two, with two deaths. Diphtheria thirteen in twelve homes; no deaths. Mumps one hundred and fifty four. Whooping cough fifty-four cases, with six fatalities, all babies. Erysipelas, two recovered; Cerebro-spinal Meningitis, one died. Sleeping sickness, one case came home sick from Detroit and died, and Itch, one case.

The water provided our citizens during the year has been good with the exception of two short periods, when a few samples showed some contamination. This was always at a time when the chlorine injector was out of commission so that some water entered the city mains without chlorination. This could be easily overcome should our Water Commission take the necessary steps to provide a proper filtered water basin where all water before entering the city mains would be chlorinated without having to use a high pressure pump to inject the chlorine, which is at all times liable to adjustment repairs. Three new filters were installed early in the year making eight in all with a normal daily capacity of two million one hundred thousand gallons, while the amount used in the same time varies from one million five to eight hundred thousand gallons. This surplus would also provide for easing off of the capacity pumpage when the filtered water basin is constructed, and then our citizens need have no fear about its safety for use for all domestic purposes as the chlorine would have at least forty minutes to one hour to act before entering the city mains instead of, as now, receiving the chlorine when entering the mains. Chlorine is used in the water the whole year round but very much less quantity in the winter months. The one mild case of typhoid goes to show that our city analyst, Dr. Mustard, and City engineer Fuller, are watching our city water supply carefully. We hope that our new water Commissioners will take active measures to meet this need at a very early date.

There have been more or less just complaints about handling and disposal of the city garbage during the past year though I am sure it was an improvement on former years. This troublesome matter has been disposed of for all time by a vote of the citizens on a By-law submitted in November and carried by a vote of three to one authorizing the City Council to immediately proceed with the construction of a suitable incinerator to take care of the garbage of the future.

The city's milk supply for the year has been quite satisfactory so far as solids and butter fat are concerned: but not so with regard to cleanliness. I have found that about two thirds of the producers are more or less careless about proper cleaning of the cow before milking, with carelessness of person milking. In some cases owing to this, considerable sand and fine particles of manure find their way into the milk pail and then into the milk bottle, thence to the consumer. The other third should be commended for the care they have shown by producing really clean milk. Warnings have been sent out to the careless, and in many instances the results of the tests have been published in the local newspapers, with the object of giving credit to all who are producing good clean milk, while to the careless it is a warning to improve conditions or they will find themselves liable to police court proceedings without any possible ground for excuse in not correcting the cause for complaint.

During the year I tested one hundred and eighty six samples of milk for butter fat solids and cleanliness. Our city By-law requires 3.5 per cent. butter fat and 12 per cent. solids. Over eighty per cent. of the producers filled, or more than came up to the requirements.

Our population at the beginning of the year as given by the assessors is 15.525 with a birth rate for the year of 400 which means 25.7 per thousand: this including twelve premature births were 38; this means a death rate of 9.8, while if we leave out the premature cases it would give a death rate of 6.9. The total number of deaths of all ages were two hundred and fifty one.

Venereal Diseases reported are twenty-five of Gonorrhoea and nine cases of Syphilis. It is quite evident that many of the cases are not being reported as the above number were handed in by less than half of the Doctors of the city. The reason for withholding this important information is hard to understand since all are reported by serial number.

Baby Clinic.

Through the efforts of kindly disposed citizens, and Doctor McNally, our District P.H.O., with Dr. Bell of Toronto and Public Health nurse, Miss Riddel, along with the hearty co-operation of nearly all the local medical men, and financed by the ladies of the local Red Cross society, a Well Baby Clinic has been established and been in operation since the latter part of May, and has been carried on quite successfully since the last week of July under the guidance of our Health nurse Miss Anna D. Beck. The following is a short summary of the work accomplished since July 25th, the date of Miss Beck's appointment as Public Health Nurse for the city of Chatham. There were 206 babies registered under the Provincial Health Nurse, Miss Riddle; of these 104 came the opening days and only came the once. They either lived in the country or gave wrong addresses and have not been located since. When our data cards were printed only those who had attended more than one clinic were copied, the rest were turned in to the Provincial Board of Health. At present 247 babies are registered, 80 have attended more than once, the balance from twice to fifteen times.

In August well baby clinic attendance was 128 and number of visits made were 208.
In September well baby clinic attendance was 129 and number of visits made were 201.
In October well baby clinic attendance was 114 and number of visits made were 197.
In November well baby clinic attendance was 182 and number of visits made were 196.

There are 22 prenatal cases registered with this clinic, one tuberculosis case and 4 syphilitic cases.

(Signed)—ANNA D. BECK.
Public Health Nurse for Chatham.

PUBLIC SCHOOL NURSE—MISS MARY NORTHWOOD'S REPORT.

A summary of the School Nurse's work in the Chatham Public Schools: Her duties are confined toward aiding as much as possible in the improvement of the physical and general condition of the nineteen hundred pupils of the city schools, such as finding any defects and then calling the attention of the parents and where necessary urging medical or surgical treatment in order to correct these defects. Also by talks on hygiene from its many aspects; and getting the children interested in the knowledge that fresh air, cleanliness, proper food well masticated, some milk and a plentiful supply of good water each day, with long hours of sleep in well aired rooms are among the chief ways of making their lives useful during their school life, by thus developing a strong and healthy body and strong mind.

My time is divided among three quite large schools. Two days each week is spent at Queen Mary school, with a day and a half spent at each of the others, Central and McKeough schools. Regular hours are observed and certain time allotted to each class, for an inspection of the pupils; the juniors being inspected twice monthly and the seniors once.

At a time of any serious contagion or any special cases that may come to my attention the regular routine has to make way for the more important that arises.

The assistance of the teacher means much, as, unless her aid is given in observing and sending to me for inspection or examination of such defects as are apparent to her in the classroom, one person working among hundreds of pupils and spending at the most only eight days in each school can do but little toward improving the physical wellbeing of the future manhood and womanhood of fair Canada.

Since January last twenty-five per cent of all the pupils have had their teeth attended to, forty-four pupils have had defective vision corrected by the aid of glasses or through treatment. Fifty-five children have had enlarged and diseased tonsils removed, as well as having any obstruction of the nasal passages cleared away. There have been twenty-six ear cases treated by the Doctors, while I have made two hundred and twenty home visits.

The question of children being sent to school from homes where a child has an unreported contagious disease, keeps one constantly on the alert, as we find this thing frequently happens, thereby causing the disease to spread among their class mates and to other homes.

(Signed) T. L. McRITCHIE,
M.O.H.

REPORT OF SANITARY INSPECTOR D. H. HOLMES, YEAR 1921.

Mr. Chairman and Members of the Board of Health: As Sanitary Officer I wish to submit the following report for the year ending the 30th day of November, 1921. The number of homes placarded for contagious diseases were as follows: Scarlet fever fifty-four, Measles one hundred and seventy-one, Chickenpox seventy-four, Smallpox one, Diphtheria twelve. I disinfected two hundred and twenty-four homes, and also disinfected the following schools viz. the Collegiate Institute, Central school, the McKeough school, the Queen Mary school and St. Joseph Separate school, the Canada Business College and the Public Library.

Inspected slaughter houses nine times, all the butcher shops fourteen times, all the cafes sixty times and all our laundries fifty-five times. Gathered one hundred and eighty samples of water for analysis by the Department laboratories at London and Toronto. Collected one hundred and sixteen samples of milk that were tested out by the Medical Officer of Health and sixty one samples tested for the milk dealers as to cleanliness. Made seventy-eight calls on families that were under quarantine and needed necessary supplies until the quarantine was lifted.

Attended the market on two days every week as Inspector of food stuff offered for sale, where I condemned as unfit for food two carcasses of veal, one of beef, five lots of fowl, two lots of butter and five lots of fish. Notified the garbage collectors during the year to gather up from the different streets thirty-two dead dogs, twenty-eight cats, three rabbits, and nine chickens.

Had five different lots of hogs moved in compliance with the city By-law respecting this matter. Had eleven horses that were lame or had other ailments laid up and given proper care, while had three killed. Laid five Police court charges one the breaking of quarantine, the others connected with milk and fish.

Had one thousand one hundred and twenty four outside closets properly cleaned by the scavenger during the year under sanitary conditions as far as possible.

(Signed).—T. L. McRitchie,

M.O.H.,

COBALT.

To the Local Board of Health of the Town of Cobalt, Ontario.

Sirs:—

Your Medical Officer of Health and Secretary beg leave to submit the following report on Sanitary conditions and Vital Statistics to December 1st, 1921.

VITAL STATISTICS.

The total number of births recorded during the year to December 1st was 152. The total number of deaths occurring in the year was 45. Of the deaths, there were four from infectious diseases, namely, two from diphtheria and two from tuberculosis. Three deaths resulted from accidents. The following cases of infectious diseases in the Town during the year to December 1st were reported:

Scarlet Fever	3
Diphtheria	28
Smallpox	7
Tuberculosis	4
Typhoid Fever	1

It is noticeable that there were no deaths from Typhoid fever during the year and the only case which came to the notice of the Medical Health Officer was one which did not originate in the Town. All of the cases of infectious diseases were quarantined and the usual regulations with such cases carried out.

The cases of smallpox were of a mild character and easily controlled.

The new Isolation Hospital established by the Town and the Township was put into use for about one month and was closed on the discharge of the cases, two cases in all being treated at the Isolation Hospital and the other cases being treated in the homes of the patients.

GARBAGE COLLECTION.

The garbage collection has been regularly and efficiently done by the Contractor. The few complaints that were made, received prompt attention.

WATER.

Samples of water have been sent to the Provincial Laboratories regularly. All samples show some contamination in about 50 C.C. of water. This condition has always prevailed. The condition of the water is not sufficiently dangerous to warrant the condemnation of the water for domestic use and is not alarming. We think the condition of the West Cobalt dam is responsible for what degree of danger from contamination may exist in the Town water supply and we have recommended that this dam be repaired. This recommendation has been approved by the Local Board of Health and referred to the Council for action.

DAIRIES.

The milk supply has been reasonably satisfactory during the year, although during the winter months the butter fat content of the milk was low in all the dairies, the lowest being 2.4 per cent. and the average 3.65 per cent. The milk supply of the Town comes from five dairies which have been inspected at regular intervals and each of which have been found to be in satisfactory condition.

INSPECTION.

The Schools were inspected and found in good condition.

Two different premises found to be in an unsanitary condition were closed as being unfit for occupation. Both of these places after having made the improvements required by the Board of Health have been re-opened.

The market is regularly inspected by the Sanitary Inspector and conditions there are found to be satisfactory.

One stable in the vicinity of St. Patrick's Separate School was caused to be closed and other stables were ordered closed until made to conform with the By-Law.

PROSECUTIONS.

Two cases of breaches of the Milk By-Law were prosecuted, one of which case was dismissed and a fine imposed in the other case.

GENERAL.

The foregoing statistics show that the general health of the Town has been good. We were rather fortunate in not having had any serious epidemic of infectious diseases.

In closing we wish to thank the Local Board of Health for its co-operation in enforcing the health regulations.

E. W. MITCHELL
Medical Officer of Health.

R. C. O'GORMAN
Secretary.

COLLINGWOOD.

To the Mayor and Council.

SIRS:—

I herewith submit to you my report for the year ending October 31st, 1921.

Statistics:—

Births	119
Deaths	96

Classifications of deaths:—

Tuberculosis	8
Diphtheria	1
Accident	8
Old age	9
Under 2 years	9
Stillborn	6

RE TUBERCULOSIS.

I regret that we have had more deaths from this dreaded disease than usual, but hope through the improvement in our milk supply and the educational work of our Public Health Nurse, that the mortality may be lessened. The Provincial Board of Health requires that all these cases be reported to the M.O.H.

RE INFANT MORTALITY.

It is very gratifying to note the decrease in the death rate of children under two years which I attribute to better milk supply and improvement in feeding.

RE COMMUNICABLE DISEASES.

We have been free from any epidemic during the year. The cases reported are as follows:—

Chicken Pox	15
Diphtheria	6
Infectious Disease	2
Measles	1
Small Pox (Imported)	1
Scarlet Fever	3

I would again urge that all suspicious cases be reported at once. It is very important, first, to prevent the spreading, and second, that treatment should be instituted early, especially in diphtheria, as antitoxin should be administered early. Antitoxin is supplied free by the Provincial Board of Health.

RE TYPHOID FEVER.

Our town has been almost free of this disease. Cases of typhoid should also be reported according to the regulations.

Our veterinary inspector has made regular inspection of dairies, and reports improvement. We are very anxious to obtain pure, wholesome milk for our citizens, and are endeavoring to have the dairies up to the requirements necessary before the Dominion Veterinary Inspector makes the Tuberculin test of all cattle. We hope to have this done soon.

Owing to the very mild winter our ice supply was somewhat limited and in consequence of higher cost. This was a detriment to health, as without ice it is impossible during the hot summer months to keep foods, especially milk, as they should be.

The town water has been regularly analysed by the Provincial Board of Health and when found dangerous the citizens were advised to boil it. During the latter part of the summer the analysis showed it to contain colon bacilli. This, I believe, was due to the intake pipe not being out far enough to avoid any contamination from Pretty River. At the same time the Chlorination Plant was out of commission. The yards adjacent to the river were inspected and any suspected source of contamination ordered to be removed.

We applied to the Provincial Board of Health for a Public Health nurse to give practical demonstrations in Child Welfare and Clinical Work. Miss Castle was sent, and up to October 31st five clinics were held with an aggregate attendance of 70. A doctor attended each clinic. 18 cases required advice re feeding. 8 referred to family doctor for operation or treatment. Miss Castle also made 335 home visits. You may judge by this the beneficial work the public health nurse does and I wish to express my appreciation here of the excellent and capable work done by her. I believe Miss Castle has permission to continue her work here till the end of the year and we are hoping, through the courtesy of the Board of Education, to have the school nurse devote some of her time to this very valuable work.

Supplying milk to malnourished children at recess has been found to be very beneficial in schools where it has been tried and I would consider it advisable to test the efficiency of it here.

The Board of Health is always ready to receive complaints about any unsanitary condition and will immediately endeavor to remedy anything justifiable.

I would advise, (*a*) that we have a municipal dairy where milk would be delivered by the producer to one central station, there to be tested, pasteurized, bottled and delivered under proper sanitary conditions.

(*b*) The intake pipe to be extended to deeper water.

(*c*) A municipal garbage system be instituted, requiring all organic refuse to be placed in fly-tight cans and all garbage regularly carted away and properly treated.

(*d*) That all bread be wrapped.

I wish to express my appreciation of the valuable and cheerful assistance rendered me by the sanitary inspector the Chairman and members of the Board.

I remain,
Yours respectfully,
DONALD MCKAY,
Medical Officer of Health.

CORNWALL.

To the Chairman and Members of the Local Board of Health.

GENTLEMEN :—

In accordance with the requirements of the Public Health Act I beg to submit my annual report on the sanitary conditions of the Town for the year 1921.

In the beginning of the year the Corporation of the Town appointed two of our policemen as sanitary inspectors and these officers have during the year inspected the various portions of the town continuously and as a result the municipality has been kept in a sanitary condition as far as possible.

The water supply of the town has been examined by the Provincial Authorities on several occasions and although some minor chemical defects have been found, nothing injurious to the health of the community has resulted.

The Chlorinating Plant which was inaugurated in 1920 has continued to act most successfully and whether as a result of this chlorinating system or otherwise, I am able to report that practically no typhoid has originated within the Municipality, wit hthe exception of two or three cases.

and western portions of the Town have been furnished with a good system of cellar drainage and in many instnces the ratepayers have at their own expense installed septic tanks and in this way have been able to avail themselves of the sewerage system. This portion of the Town has also been supplied with an extension of the water system giving to all the residents of the northwest section good and wholesome drinking water. As a result, an order has gone forth closing all wells on the line of the water supply.

The eastern and southern portions of the town have also been benefited by the extension of the water system.

Almost continuously during the year closing, we have had isolated cases of scarlet fever, measles and diphtheria. In the latter months of the year and at the present time, we are passing through quite an epidemic of contagious diseases, namely, scarlet fever, measles and small-pox. The small-pox and scarlet fever are of a very mild type but diphtheria has been more fatal, several deaths having occurred as a result of the epidemic.

In the latter months of the year, Fly Creek, which is the main drainage system for surface water, running from north-east to south-west through the town and entering into the River, was opened and cleaned, which has greatly improved the surface drainage along its course.

I have again to draw the Board's attention and would earnestly suggest that they place the matter before the Municipal Council, that we are as yet unprovided with any suitable building, which can be used as an Isolation Hospital for the care of Contagious diseases, which our town is required to support. Owing to this cause, the expense of caring for whole families is getting to be quite an item and a great saving could be effected, if some means were adopted for the isolation of contagious diseases, dependent upon the Corporation for maintenance.

In view of the fact, that at the east and west of the Town are two Villages, being part of the Township of Cornwall, and practically the Town of Cornwall, I would suggest that a conference between the municipalities of the Township of Cornwall, and of the Town of Cornwall, be called, with the view of establishing a building, which could be used for both municipalities. If this were done, money would be saved, instead of expending the very exorbitant amounts, which are required to care for communicable diseases, as matters exist at the present time.

I have to thank you, Mr. Chairman and the Members of your Board, as well as the medical men of the Town, for the assistance they have given me in the carrying out of the various requirements of the Public Health Act.

All of which is respectfully submitted.

(Sgd.) C. J. HAMILTON,
Medical Officer of Health.

DUNNVILLE

Dr. John W. S. McCullough,
Secretary Provincial Board of Health,
Toronto, Ont.

Dear Sir,—

I beg to submit herewith the Report of the Local Board of Health of Dunnville for the year 1921.

The following communicable diseases were reported to the Local Board, *viz.* measles 10 cases, typhoid fever 4, diphtheria 7, and scarlet fever 23. From these fatalities occurred in one case of typhoid-pneumonia and two of diphtheria, one of which came from outside the municipality, being discovered in transit on the railway.

The Sanitary Inspector reports over two hundred visits, conferences and communications in pursuit of his duties. These include the usual quota of nuisances, which in the majority of cases have been removed without friction. A few such cases are still pending, but these are being closely followed up by the Inspector.

Dr. C. A. M. Thrush, M.O.H., has, during 1921, given special attention to matters pertaining to the health of school children. In conjunction with the School Nurse in the earlier part of the year, and supported by the Municipal Council in connection with medical, surgical and dental treatment of children of indigent parents, a great deal of work was done which was hitherto unattempted.

Early in the year the M.O.H. again impressed upon the Local Board of Health, and through it upon the Municipal Council, the necessity of a system of garbage collection, and of an improved water supply. The former was arranged by the inauguration of a semi-weekly collection of garbage, which has proved quite satisfactory, but the latter still remains one of Dunnville's greatest banes.

Throughout the year, an almost continuous daily supervision of the water used for domestic purposes was maintained by analyses by the the Laboratories of the Provincial Board of Health. With very few exceptions these showed the presence of bacteria of intestinal origin, and in some cases the pollution was dangerously heavy. The M.O.H. has strongly advised boiling the water; and he has also recommended treatment by anti-typhoid vaccine.

At various times throughout the year, the installation of a liquid chlorine apparatus in connection with the present water-works system was recommended, in place of the crude arrangement now in use which is obviously inefficient. Since it was shown that such an up-to-date chlorinating plant could later be attached to a new filter, the recommendation seemed feasible, with a prospect of some improvement, but the Public Utilities Commission which manages the water-works has made no move in this matter.

A sanitary survey of the Town was made in mid-summer by officials of the Provincial Board of Health. Besides several recommendations relating to sewers, sewage disposal, and other matters, the report contained the result of analyses of samples taken from nearly two hundred wells from which water was being used for domestic purposes. Only one of these proved to be free from pollution.

On August 19th, while the Municipal Council was preparing to submit a by-law to the rate-payers for the necessary expenditure for a new filter and pumping-plant, the Chairman of the Public Utilities Commission served an order of the Provincial Board of Health on the Council, for the installation of the proposed works. The by-law was submitted in September but was defeated by the vote of the people, and there the matter rests, awaiting action by the incoming officials of 1922.

Yours faithfully,
JOHN CLARK,
Secretary of the Local Board of Health.

FORT WILLIAM

Fort William, Ont.
November 1st, 1921.

To the Chairman and Members, Local Board of Health, Fort William, Ont.

Gentlemen: -

I beg to submit herewith my report for the year ending October 31st, 1921:

VITAL STATISTICS.

Estimated population	20,086
Death rate per thousand population of all deaths registered	12.84

This rate is 3.94 lower than that of last year. 2.37 of the death rate last year was due to flu. This year the rate from flu is practically nil.

Thirty-six non-residents died in this municipality. Ten deaths occurring in other municipalities were registered here. Excluding these the death rate is 10.50.

Birth rate per thousand population	36.61
Infant mortality rate per thousand births	107.05

As far as I am able to ascertain, this is the lowest rate in the history of this municipality. The reason for this low rate is largely due to the hot dry summer. Heat without rain breeds no flies.

Twelve persons were summoned to court during the year. The causes for summons were as follows.

Breach of milk by-law	4
Failure to comply with notice re nuisance	2
Carrying on an offensive trade without license	1
Breaking quarantine	3
Killing hogs on premises contrary to law	2

All of these were convicted and paid fines aggregating $216.00.

The following products and supplies from the Provincial Board of Health were distributed:

Diphtheria Antitoxin	2,557,000 units
Tetanus Antitoxin	41,000 units
Pertussis Serum	570 c. c.
Smallpox Vaccine	2,600 tubes
Sterile Swabs	118 swabs
Influenza Serum	70 c. c.
Typhoid Serum	36 doses
Silver Nitrate Solution	96 ampules
Phenarsenamine	60 ampules

The activities of your department this year included the establishment of a well baby clinic. This is now on a permanent basis, clinics being held in the city hall Tuesdays and Fridays, from four to five p.m.

During the summer months clinics were held in Wesley Institute in Ward one and in Ward four branch library.

In the month of August I conducted a pre-school clinic for all children intending to enter school this fall. This was of considerable value in discovering many remediable defects.

A very distinct step forward was the establishment on September first of a clinic for the treatment of venereal diseases in the McKellar General Hospital, under the auspices of your board in co-operation with the Port Arthur board of health.

This clinic is intended to serve the entire district of Thunder Bay. The laboratory is under the immediate direction of Dr. Walter P. Hogarth, who is eminently qualified to carry on the work. He and his assistant, Miss Irene Saunders, graduate nurse, have been added to your staff. The extent of the work being done is shown in that seventy-five treatments were given in October.

Your board is to be congratulated on the conclusion of the epidemic of scarlet fever which lasting three years, created much controversy and for its mildness was without parallel in the history of the disease. I wish to add that I appreciate very much your support of my conduct of affairs at all times during the course of the epidemic and I do not hesitate to say that such action was of inestimable value in obtaining the end result. Such support is an impetus to all your staff to endeavor constantly to do better work.

You are to be congratulated on the low death rate and infant mortality rate shown this year. While part of this is due to natural causes there is no doubt that some part is due to your great interest in all problems pertaining to the health of our citizens.

Not the least pleasing part of this report is that these increased activities have been accompanied by a very considerable reduction in the per capita cost of the department, viz: 16 cents. I think it can be truly said of your department that economy with efficiency has been your watchword throughout the year.

Then, too, the decision of your board to make a systematic collection of the isolation hospital accounts has resulted in the obtaining of more than fifty per cent. of the total cost of the administration of the hospital for the year. The policy now followed will result in a constant improvement in collections.

During the year I made twenty-five visits and held fifteen consultations for medical relief cases.

SMALLPOX.

There are ten cases of this disease reported. There were no deaths. Statistics follow:—

Cases	M.F.	under 5 yrs	5-9 yrs.	10-14 yrs.	15-19 yrs.	over 19 yrs.	Recovery	Deaths
201	92 109	32	92	48	7	22	195	5

	Cases	Deaths
1917	3	0
1918	2	0
1919	0	0
1920	24	0
1921	10	0

SCARLET FEVER.

There were two hundred and one cases of scarlet fever reported during the year with five deaths. This is one hundred and one cases less than last year. Statistics are as follows:— ....

Classes M.F. 5 yrs. yrs. yrs. yrs. yrs. very Deaths

DIPHTHERIA.

There were twenty-four cases of this disease reported, with two deaths.

1917	13	1
1918	12	2
1919	22	1
1920	22	1
1921	24	2

MEASLES.

There were six hundred and sixty-two cases of measles reported, with seven deaths

1917	338	3
1918	12	0
1919	0	0
1920	384	5
1921	662	7

Whooping Cough.

There were one hundred and four cases of whooping cough reported, with three deaths.

1917	10	17
1918	259	1
1919	2	0
1920	60	3
1921	104	3

Erysipelas.

1917	13	1
1918	4	0
1919	1	0
1920	19	1
1921	16	0

Chickenpox.

1918	75	0
1919	31	0
1920	72	0
1921	193	0

Rubella.

1918	25	0
1919	1	0
1920	0	0
1921	0	0

Mumps.

1918	92	0
1919	1	0
1920	0	0
1921	5	0

Pulmonary Tuberculosis.

There were twenty-two cases of tuberculosis reported of which five cases came from other municipalities for treatment at our general hospital. There were eight deaths, three of which were non-residents.

Influenza.

There was but one case of influenza reported, with two deaths.

Poliomyelitis.

There were seven cases of this disease reported, with one death.

Typhoid Fever.

There were fourteen cases of this disease reported. The sources of these cases were:—

S.S. Noronic	1 case
S,S, E.B. Osler	1 "
S.S. Glencairn	1 "
Dryden, Ont.	1 "
Moose Hill, Ont.	1 "
Stanley, Ont.	3 cases
Cloud Bay, Ont.	3 cases

The probable source of infection in two other cases was rural as they had been out of the city. One case, brother of a patient, was infected before a diagnosis of the original case was made.

All cases were nursed at the McKellar Hospital with one exception. One of the cases infected at Cloud Bay died.

A general resumé of the communicable diseases reported follows:—

	Cases	Deaths
Smallpox	10	0
Scarlet Fever	201	5
Diphtheria	24	2
Measles	662	7
Whooping Cough	104	3
Erysipelas	16	0
Chickenpox	193	0
Rubella	0	0
Mumps	5	0
Tuberculosis	22	8
Influenza	1	2
Typhoid Fever	14	1
Primary Pneumonia	76	11
Poliomyelitis	7	1
Syphilis	27	1
Gonorrhea	42	0
Chancroid	1	0
	1,405	41

ISOLATION HOSPITAL REPORT.

Patients admitted.—

Scarlet Fever	65 cases
Diphtheria	14 "
Smallpox	6 "
Measles	1 "
Total	86 "

Hospital days 3423

There were four deaths, two from scarlet fever and two from diphtheria. The two deaths from scarlet fever were malignant cases. One death from diphtheria was a case brought to the city suffering from the disease, in which treatment, though instituted immediately on arrival here, was too late to save the patient. The other fatal case of diphtheria was in the hospital but one hour and ten minutes.

The type of scarlet fever this year was worse than last. This necessitated more exacting nursing.

The following operations were performed at the hospital:—

Myringotomy	6
Mastoid	4

FINANCIAL STATEMENT.

Debit:		
Salaries of staff		3,628.00
Temporary Employees		1,012.72
Maintenance Account		3,889.89
		$8,530.61
Credit:		
Accounts collected	4,289.01	
Garden Produce	150.00	$4,439.01
Net cost of operation		$4,091.60
Cost per patient per diem		$2.49

VISITING HEALTH NURSE'S REPORT.

Miss Gerry made three thousand four hundred and forty-three (3,443) calls and attended clinics on twenty-nine occasions and training class on four occasions during the year. Classification of these calls follows:

Month	New Born Babies	Breast Fed	Cows' Milk	Miscellaneous Foods	Special Calls	Revisits to Infants
1920						
Nov.	35	24	7	4	10	322
Dec.	36	19	10	7	4	298
1921						
Jan.	74	66	4	4		146
Feb.	49	43	2	4	16	186
Mar.	29	25	3	1	5	59
Apr.	47	41	2	4	12	181
May	48	39	1	8	5	219
June	60	45	8	7	14	260
July	46	37	4	5	12	262
Aug.	74	68	1	5	9	213
Sept.	41	38	1	2	4	190
Oct.	57	49	2	6	13	189
Totals	596	494	45	57	104	2525

Other calls not classified above were:

Prenatal Calls	113
Tuberculous Cases	25
Visits to certify children back to school	68
Taking swabs	12

Laboratory Report.

Dr. N. O. Thomas, director of the laboratory of the Provincial Board of Health has very kindly given me a report of the work done in the local laboratory for this municipality. Herewith Dr. Thomas' report.

Dr. E. B. Oliver, Medical Officer of Health, Fort William, Ont.

Dear Doctor:—

Following your request, I beg to submit summary of work done in this laboratory for the City of Fort William for the last twelve months.

Diphtheria.

Release swabs		
Positive	62	
Negative	69	
Total		131
Swabs for diagnosis		
Positive	51	
Negative	164	
Total		215

Tuberculosis.

Sputum examinations		
Positive	45	
Negative	234	
Total		279

Typhoid.

Widal agglutination tests		
Positive	18	
Negative	35	
Total		53

Syphilis.

Colloidal gold test		8
Wasserman test		
Very strongly positive	101	
Strongly positive	11	
Weakly positive	11	
Negative	524	
Total		647
Treponema pallida (dark field)		
Positive	3	
Negative	3	
Total		6

Gonorrhoea.

Smear examinations		
Positive	36	
Negative	123	
Total		159

MILK EXAMINATIONS		
Fat content	238	
Antiseptics	5	
Bacteriological	3	
Total		246
WATER ANALYSIS		
Bacteriological		45
MISCELLANEOUS ANALYSIS		
Total		451
Grand Total		2240

You will see that we exceeded last year's total for your city by about 500 analyses. This I think speaks for itself in the matter of co-operation of the city health officer and physicians with this laboratory in the interests of the health of this community.

I am,
Faithfully yours,
N. O. THOMAS

Dr. E. B. Oliver
Medical Officer of Health,
Fort William, Ontario

In addition to this I have examined several dozen specimens from farmers for butter fat percentage in my own laboratory.

SUMMARY OF MILK TESTS:

Name of Vendor	No. of Tests	Fat Average
Jas. Otway	18	3.44
H. Crabtree	17	3.41
F. Widnall	12	3.38
H. Dougherty	13	3.35
B. Webster	15	3.33
Ed. Otway	14	3.23
F. McCarthy	18	3.20
Kellough Bros	20	3.18
F. Morris	20	3.16
F. Scollie	14	3.15
Thompson Bros.	7	2.94

During the year (April 1st) Fred Widnall took over the dairy of Thompson Bros. Still later the Thunder Bay Dairy Products Co. took over the business of F. Morris. One test of milk from this company went 3.3 for butter fat.

Most of the samples were clean.

One dealer was in court for offering for sale milk with a low fat percentage.

SANITARY INSPECTOR'S REPORT.

A. J. BOLUS, M.R.S.I.,
Sanitary Inspector.

Dr. E. B. Oliver, Medical Officer of Health, Fort William, Ont.

DEAR SIR:—

I beg to submit herewith for your approval my report of the work done in this department for the year ending October 31st, 1921.

VISITS TO BUSINESS PREMISES.

Continual watchfulness has been exercised over all places where food is sold, or food stuffs prepared for sale, or stored. Generally speaking conditions in this respect are good, but some of the smaller places are difficult to control and I am doubtful if the small amount of business they do warrants their existence.

Number of visits made:

Butcher Stores	481
Bakeries	125
Candy Stores and Cafes	971
Cafe and Rooming Houses	250
Grocery Stores	631
Second Hand Stores	94
Apartment blocks	96
Total	2648

Seventeen pounds of butter were seized and destroyed.

DAIRIES.

There are now thirteen dairies operating in the city, three of which obtain their milk from district farmers, the others keeping their own cattle. A very decided improvement is to be noted during the past year in the operation of at least three of the dairies. The others to a lesser extent have advanced in this respect, with the exception of one man who has received a final notice to carry on as required by this department or quit the business.

During the year one hundred and seventy-one samples of milk were taken from rigs in the street for the purpose of testing.

One hundred and thirty visits were made to dairies.

ABATTOIR.

I am pleased to report the abattoir continues to operate under satisfactory conditions. It will be noted that the number of animals killed is slightly in excess of last year but on a revenue basis the business would be less as more hogs and sheep were killed and a less number of cattle.

The alterations and repairs which I asked should be made to the abattoir last year have been done, and it is in a more sanitary condition and has greater facilities for proper operation. The small water supply pipe in use last year was sufficient for working purposes, but as it was the only water entering the sewer on McLaughlin Street, it was necessary to ask the engineer to have the street sewer flushed out at intervals. A compromise was, however, made by having 4-in. water pipe installed in the killing room, which pipe is however, only required to flush the sewer.

I made 257 visits to the abattoir. Practically all the meat was inspected by me. Three thousand eight hundred and seventy pounds were condemned as unfit for food, including five hogs with cholera, one hog tubercular, two cattle tubercular, two calves tubercular, three cattle slaughtered after injury in transit and one sheep carcase and other meat for various causes.

SUMMARY OF ANIMALS SLAUGHTERED.

	Cattle	Pigs	Calves	Sheep	Total
Nov. 1920.	191	18	21	2	232
Dec. 1920.	122	15	33		170
Jan. 1921.	112	76	28		216
Feb.	71		9		80
Mar.	94	6	129	13	242
Apr.	71	6	80		157
May	70	14	80		164
June	106	48	170	67	391
July	81	8	120	17	226
Aug.	145	2	117	24	288
Sept.	126	27	154	3	310
Oct.	126	94	140	59	419
Totals	1315	314	1081	185	2895

MEAT CONDEMNED.

Nov. 1920.	1130 lbs.
Dec. 1920.	—— lbs.
Jan. 1921.	—— lbs.
Feb.	—— lbs.
Mar.	300 lbs.
Apr.	470 lbs.
May	750 lbs.
June	620 lbs.
July	350 lbs.
Aug.	90 lbs.
Sept.	—— lbs.
Oct.	160 lbs.
Total	3670 lbs.

COMMUNICABLE DISEASES.

During the year I made eight hundred and twenty eight visits to homes in connection with communicable diseases, seven hundred and eighty-four of which were in the months of November, December and January whilst the measles epidemic was with us.

THE MARKET.

The public market was opened on the tenth of May and is still in operation, Tuesdays and Fridays being the days of business. The place has been extensively used by the farmers, and the produce offered for sale has at all times been of good quality and properly handled. In response to my request last year no horses have been allowed to remain in the building this season, result, few flies. The Market has been at all times kept in a sanitary condition.

SEWER CONNECTIONS AND PLUMBING INSTALLATIONS.

During the year sixty-nine old premises have been provided with proper sanitary connections, twenty-five of which were installed by the city. It is to be hoped that the Board will be able to secure an appropriation so that in the coming year we may be able to eliminate more of the undesirable privies.

NUISANCES.

All nuisances found by me or reported to this office have been dealt with as found expedient, many verbal orders and requests having been made and where these have not sufficed written notices have been given.

One hundred and fifty-two written notices were sent out during the year. Five cases were taken before the Police Magistrate.

It is gratifying to note the improvements this year in the East coal dock section of the city. This I believe is the outcome of the various improvements made by the works department and the better system of garbage collection now in vogue, thereby giving the people an incentive to do a little for their own benefit.

The animals in the coal dock are not less than they have been but are now kept in a more cleanly condition.

The cost of lumber having gone down to a more reasonable price, I hope this coming spring to have the manure boxes and privies put in better shape.

WHOLESALE BUSINESS PREMISES.

No complaints have been received from any source in regard to the conduct or conditions of the wholesale houses supplying food stuffs, and visits of inspection have shown the same to be operated in a cleanly manner and kept in a very creditable condition.

SUMMER RESORTS.

Coney Island Beach was opened as a summer resort. Steps were at once taken to control the sanitary arrangements.

Chippewa Park was visited on several occasions. This place is still in the control of the Parks Board and is not fully open to the public, who however have had opportunities to see for themselves a real resort in the making.

PULP MILL.

I have made several visits to the pulp mill in an endeavor to get proper sanitary plumbing installed, but it seems this item is to stand over until the future additions are decided upon.

Generally speaking the accommodation provided for the men is satisfactory and kept in good order.

At his request I met the C.N.R. Engineer in charge of water supply, with Mr. Dooney, in regard to certain alterations and additions to the main serving the pulp mill, with a view to the prevention of contamination of our water supply.

SCHOOLS.

Visits have been made to each of the Public and Separate Schools. A detailed report as to conditions was made, a copy being sent to the Board of Education, another to the Provincial Board of Health at whose request the inspections were made and a third copy is on file in my office.

Another inspection will be made this winter showing to what extent the recommendations made have been acted upon.

DISTRICT INSPECTION.

At the request of Dr. Sparks, Prov. Dist. M.O.H., I accompanied him on a tour of inspection around the East coal dock section, harbour frontage and to several of the dairies.

CONVENTION.

I attended the Annual Convention of the Sanitary Inspectors' Association held this year at Ottawa, at which splendid addresses and papers were heard and discussed.

These conventions are the one opportunity I have of keeping up to date and I trust the Board will grant the same facilities for me to attend the next meeting at Winnipeg in the coming year.

All of which is respectfully submitted,

A. J. BOLUS, M.R.S.I.,

Sanitary Inspector.

BIRTHS REGISTERED IN THE CITY OF FORT WILLIAM

for the year ending October 31st, 1921

Month	Total	Males	Females	Twins
1920				
November	54	23	31	2
December	76	37	39	3
1921				
January	43	16	27	......
February	52	22	30	1
March	49	25	24	......
April	79	34	45	1
May	63	35	28	2
June	54	26	28	......
July	60	32	28	......
August	47	21	26	......
September	63	30	33	2
October	76	36	40	1
Totals	716	337	379	12

STILL BIRTHS

1920			
November	2	1	1
December	2	1	1
1921			
January	2	1	1
February	3	2	1
March	7	5	2
April	2	2	0
May	1	0	1
June	1	1	0
July	0	0	0
August	1	1	0
September	2	1	1
October	3	2	1
Totals	26	17	9

ANALYSIS OF DEATHS UNDER ONE YEAR BY WARDS

		Wards					Non-residents
		Total	1	2	3	4	
151	Congenital Debility, etc.	39	20	6	4	4	5
104	Enteritis and Diarrhoea, etc.	12	4			5	3
152	Other Diseases of Early Infancy.	6	2	1		3	
91	Broncho-pneumonia	7	5			1	1
89	Acute Bronchitis	3	2	1			
61	Meningitis	3		1	1	1	
8	Whooping Cough	3	2	1			
71	Convulsions of Infants	2	1			1	
6	Measles	2	1			1	
37	Syphilis	1					1
78	Acute Endocarditis	1				1	
109	Hernia, Intestinal Obstruction	1				1	
189	Ill-defined	1				1	
169	Accidental Drowning	1					1
34	Tuberculosis of other Organs	1	1				
20	Septicaemia	1				1	
36	Rickets	1	1				
150	Malformations	1		1			
10	Influenza	1	1				
	Totals	87	40	11	5	20	11

ANALYSIS OF DEATHS UNDER ONE YEAR BY MONTHS NOVEMBER, 1920—OCTOBER, 1921.

151	Congenital Debility, etc.		6	2	1	5	3	4	5	5	3		5
104	Diarrhoea and Enteritis	1				3			1		5	2	
152	Other Diseases of Early Infancy		1	1	1		1			2			
91	Bronchopneumonia				1	2	1	2					1
89	Acute Bronchitis				2		1						
61	Meningitis	1			1	1							
8	Whooping Cough	1	1				1	1					
71	Convulsions of Infants						1	1					
6	Measles		2										
37	Syphilis				1								
78	Acute Endocarditis										1		
109	Hernia, Intestinal Obstruction											1	
189	Ill-Defined					1							
169	Accidental Drowning									1			
34	Tuberculosis of other Organs.						1						
20	Septicaemia											1	
36	Rickets						1						
150	Congenital Malformations										1		
10	Influenza						1						
	Totals	3	10	3	7	12	10	8	6	8	10	4	6

DEATHS.

Number on International List.		
151	Congenital Debility, etc.	39
104	Diarrhoea and Enteritis (Under two years)	14
79	Organic Diseases of the Heart	13
92	Lobar Pneumonia	11
91	Bronchopneumonia	10
120	Bright's Disease	9
175	Traumatism by other crushing	8
169	Accidental Drowning	8
28	Tuberculosis of Lungs	8
6	Measles	7
152	Other Diseases peculiar to Early Infancy	6
61	Meningitis	6
81	Diseases of the Arteries	6
185	Fractures	5
41	Cancer of the Peritoneum, Intestines, Rectum, etc.	5
7	Scarlet Fever	5
109	Hernia, Intestinal Obstruction	4
82	Embolism and Thrombosis	4
78	Acute Endocarditis	4
40	Cancer of the Stomach	4
150	Congenital Malformations	3
137	Puerperal Septicaemia	3
89	Acute Bronchitis	3
71	Convulsions of Infants	3
64	Cerebral Hemorrhage	3
50	Diabetes (Diabetes Mellitus)	3
45	Cancer of Other or Unspecified Organs	3
43	Cancer of the Breast	3
42	Cancer of the Female Genital Organs	3
34	Tuberculosis of Other Organs	3
8	Whooping Cough	3
189	Ill-defined	2
181	Electrocuted	2
170	Traumatism by firearms	2
174	Traumatism by machines	2
154	Senility	2
146	Diseases of the Bones	2
132	Salpingitis	2
118	Other Diseases of the digestive system	2
115	Other Diseases of the Liver	2
51	Exophthalmic Goitre	2
30	Tuberculous Meningitis	2
20	Purulent Infection and septicaemia	2
10	Influenza	2
9	Diphtheria	2
173	Traumatism in mines and quarries	1
167	Burns	1
149	Other diseases of the organs of locomotion	1
140	Following childbirth (not otherwise defined)	1
136	Other accidents of labor	1
126	Diseases of the Prostate	1
110	Other Diseases of the Intestines	1
108	Appendicitis	1
100	Diseases of the Pharynx	1
85	Hemorrhage	1
69	Epilepsy	1
66	Paralysis without specified cause	1
63	Other diseases of the spinal cord	1
54	Anemia, chlorosis	1
53	Leukemia	1
48	Chronic Rheumatism	1
37	Syphilis	1
36	Rickets	1
31	Abdominal Tuberculosis	1
19	Paratyphoid Fever	1
1	Typhoid Fever	1
	Total	258

There were thirty-six deaths of non-residents in this municipality. The causes of death were as follows:

151	Congenital Debility, etc.	6
104	Enteritis and Diarrhoea	3
92	Lobar Pneumonia	3
28	Tuberculosis of the Lungs	2
169	Accidental Drowning	2
79	Organic Diseases of the Heart	2
40	Cancer of the Stomach, Liver etc.	2
51	Exophthalmic Goitre	2
132	Salpingitis	2
175	Traumatism by other crushing	1
154	Senility	1
149	Other diseases of the organs of locomotion	1
137	Puerperal Septicaemia	1
120	Bright's Disease	1
109	Hernia, Intestinal Obstruction	1
91	Bronchopneumonia	1
82	Embolism and Thrombosis	1
69	Epilepsy	1
45	Cancer of other or unspecified organs	1
43	Cancer of the Breast	1
9	Diphtheria	1
	Total	36

There were ten deaths occurring in other municipalities which were reported here. The causes of death were as follows:

175	Traumatism by other Crushing	5
150	Congenital Malformations	1
91	Bronchopneumonia	1
81	Diseases of the Arteries	1
37	Syphilis	1
28	Tuberculosis of the Lungs	1
	Total	10

FINANCIAL STATEMENT FOR YEAR ENDING OCTOBER 31ST, 1921,

Salaries of City Hall Staff	7,524.00
Special Clinic Nurse	58.34
Car Fare	92.25
Printing and Stationery	87.45
Antitoxin Syringes	51.15
Conventions	200.00
Phone and Ice	95.00
Office and Laboratory Equipment	3.95
Automobile	134.39
Incidentals	221.86
Abattoir	21.57
Salaries Isolation Hospital Staff	3,528.00
Temporary Employees	1,013.72
Maintenance	3,889.89
	16,921.57

CREDITS.

Isol. Hosp. Accts. Collected	4,289.01	
Garden Produce	150.00	
Police Court Fines	216.00	
Antitoxin Syringes	11.25	4,666.26

Net Cost of Department	12,255.31
There was also spent on capital account—Abattoir	737.34
Per capita cost—Department	42.268 cents
Per capita cost Isolation Hospital	41.977 cents
Total per capita cost operation of board	84.245 cents

Respectfully submitted,
EDWARD B. OLIVER,
Medical Officer of Health.

GALT.

GALT, Dec., 1921.

To the Members of the Galt Board of Health:—

Gentlemen:—

A record of the work performed by the Local Board of Health for the year 1921 is placed before you in the following report:—

I desire to call your attention to the very complete report of the M.O.H. This detailed report enables the ratepayers to intelligently appreciate the magnitude of the work involved, the duties and the responsibilities attached to his office.

Too often the individual sees only the official, without realizing that the administration of the health laws is a community service, whereby the health and morals of the people are safeguarded. The carrying out of the provisions of the Health Act, necessarily imposed hardships, but the attitude of the Board in the past has been very sympathetic, and the burdens have been made as light as possible.

The Vital Statistics are worthy of an extended comment. It is truly a lamentable fact reported by the M.O.H., that out of the total of 35 deaths under one year, 17 were stillborn. I had hopes that the report in this connection would be more favourable, and I sincerely wish expectant mothers would take advantage of the opportunity to consult the health nurse, and in a large measure remedy this abnormal condition.

The extension of our sewer system has been progressive, the number of connections showing a greater appreciation of this service. A number of property owners have taken advantage of the Act, enabling them to instal modern conveniences with the city's assistance, payment being made over a period of five years.

In my last report I called your attention to the need of garbage disposal, and suggested a conference with the city council, towards securing adequate dumping places. This necessity is becoming increasingly urgent, and must be attended to in the near future.

The need of the New City Hospital has been amply demonstrated during the past year, fifty-six cases having been treated successfully. This is a matter for congratulation, and should reassure parents and reconcile them to the separation entailed. The Health Act imposes a five weeks' quarantine for Scarlet Fever, by placing the child in the City Hospital one week of quarantine is required. Where there are children of school age this is a great advantage.

In this connection it may not be amiss to offer a suggestion relating to the passing of health laws. It seems to me the Local Board of Health should be advised from time to time, of any contemplated change or enactments, and should have some voice in future legislation.

The absence of Typhoid Fever is due no doubt to the purity of the water, the greatest care being taken in securing an abundant supply, free from contamination.

Another factor towards eliminating typhoid germs is the supply of pure milk, which has reached a high standard, producer and vendor co-operating together with the above gratifying results.

In my last report re Public Lavatory, I noted a resolution submitted to the City Council, but I regret to state no action has been taken. The necessity for this service should be further investigated.

During the year an effort was made to place the different health nurses under one management. It was not deemed advisable to press the matter.

In closing this report I wish to convey to you my appreciation for the courtesy and co-operation extended to me during the past year.

Respectfully yours,

J. H. LAIRD,

Chairman, Galt Board of Health.

To the Chairman and Members of the Local Board of Health, of Galt.

Gentlemen:—

In accordance with the provisions of the Ontario Public Health Act, I beg herewith, to submit my annual report, for the year ending October 31st 1921.

Re Typhoid Fever

It affords me great pleasure to report to you that our city again has been free from typhoid fever for the fourth consecutive year, and that the water supply continues to maintain its high standing, being free from any source of contamination excepting a trace of Colon Bacilli which was found a few months ago in the southern part of the collecting gallery. This condition I am happy to state has been overcome by placing a filter of sand and charcoal across that portion of the gallery.

It is also a source of pleasure to inform you, that the milk sold in the city is and has been pasteurized for over one year, thereby eliminating the possibility of the bovine tubercle being transmitted to the children. The milk on the whole has been comparatively clean, with one exception and quite up to the standard of the city's by-law, in butter fat.

Re Infantile Mortality.

During the latter part of last year we established a weekly well baby clinic under the control of the Local Board of Health, with Miss Brighty as community Health Nurse, with a view of reducing the death rate among the children, but I do not expect very great results in such a short time, as it required several months in the early part of the year to get the clinic thoroughly organized and sufficiently advertised. However I am hopeful of good results in the near future notwithstanding the fact that the work has been very much handicapped by not having larger and better quarters to facilitate us in our good work.

About four months ago, a weekly chest clinic was established under Dr. Proctor of the Waterloo County Sanitorium, from which I also expect good results, because it is a well known and conceded fact by all chest specialists, that Tuberculosis is curable if properly diagnosed in the incipient stage.

It is a lamentable fact that I am compelled to report that out of the total number of deaths among children registered in the Galt division, seventeen of which were still-born due in my judgment to the lack of proper education and care of the mother in the pre-natal condition, but Mr. Chairman I am fully convinced that this condition will be remedied to a very great extent as soon as the community or Health Nurse gets her work thoroughly organized and under control as well as receiving the sympathy and support of the citizens generally to such a worthy cause.

Re Privies.

For two or three months of this year, we have had a great deal of trouble and vexation of spirit, to keep the outside privies in a clean and sanitary condition, on account of the unfortunate appointment of a man totally unfit for the work, but happily I trust that the trouble is over, and we will again be able to report that the work is being done more satisfactorily.

During the year we have had 120 premises connected with the sewer.

Re Public Lavatories.

I regret very much indeed that I have not been able to persuade the City Council to put in Public Lavatories, as they are so badly needed on account of the lack of sufficient accommodation for the public.

Re Venereal Diseases.

Galt, judging from the reports of the medical men has been comparatively free from venereal diseases and if that is a true state of affairs, the city is to be very much congratulated.

Re Communicable Diseases.

It is a very regrettable fact that the number of communicable diseases have been greatly in excess of any year, since I have been Medical Officer of Health, with one exception, and that was the year in which the 122nd Battalion was stationed here.

Re City Hospital.

This building is now completed, furnished, and has during this year treated, and taken care of fifty-four cases of scarlet fever, one of diphtheria and one of measles. It has a cheerful and bright outlook, making it as attractive as you could expect any contagious hospital would be. The expenses connected with this Hospital have been large, but not more than could be expected when you consider that the grounds had to be levelled, put into condition and the building furnished throughout from current expenses.

As shown by the vital statistics report given below:—

The total number of deaths registered for this year, (from November 1st, 1920, to October 31st, 1921) is 163, whilst the number for last year during the same period was 175, being a decrease of 12, but even this favorable report does not do justice to our city, because I find on careful examination of the Hospital reports, that 21 deaths registered in Galt, were non-residents and therefore should be deducted from the total deaths, thereby leaving an actual death rate for the city of 142.

As will also be shown with the increase of the population from 13,092 to 13,332 and the decrease in the number of deaths from 152 to 142 the death rate per thousand has been reduced to 10.65 which rate I am satisfied will compare favorably with any city in the Province of Ontario, and yet notwithstanding this excellent showing as to the total death rate I find little or no change among children under one year.

VITAL STATISTICS.

Population	13,332
Deaths (Residents)	142
" (Non-residents)	21
" (rate per M. residents	10.65
" (rate per M. non-residents)	1.57
Infant mortality under 1 year	35
" " per M.	2.62
Births	360
Rate per M.	27.00

CONTAGIOUS DISEASES.

Reported		Deaths
0	Typhoid fever	0
60	Smallpox	0
113	Scarlet fever	0
15	Measles	0
160	Mumps	0
21	Chickenpox	0
1	Whooping cough	0
10	Diphtheria	0
1	Spinal meningitis	1
5	Tuberculosis	4

Respectfully submitted,
J. H. Radford,
M.O.H.

HAMILTON.

CITY OF HAMILTON, (*Health Department*).

(Report of The Medical Officer of Health for the year Ending October, 31st., 1921.)

To His Worship the Mayor, the Chairman and Members of the Board of Health for the City of Hamilton:

Gentlemen:

I have the honour of submitting my Report for the year ending October 31st., 1921.

The Report as submitted for your consideration, relates to Vital Statistics; particulars of Communicable Diseases, and reports of the Principal Divisions of the Health Department.

The matter of School Inspection—A special survey of artisan dwellings and other subjects relating to health conditions in the city will be touched upon in their appropriate places.

Population.—The estimated population of the City of Hamilton in the month of October was 118,233, as compared with 114,766 for the previous year.

Births.—The number of births excluding prematurity and stillbirths was 3338, showing a birth rate 28.2 per thousand of the population.

A table will be found at the end of this report showing the number of births registered each month.

Deaths.—The number of deaths from all causes and at all ages registered in the city totalled 1472.

From this number however, prematurity and still-births are deducted and give a net total of 1,260 deaths, showing death rate at 10.65 per thousand.

Hamilton is to be congratulated on such a low death rate, as this rate is the lowest for which I can find any record for at least the last eighteen years, as shown in a table at the end of this report.

Infantile Mortality Rate.—The number of deaths amongst infants under the age of one year, exclusive of prematurity and still-births was 259. This is equivalent to an infantile mortality rate of 77.6 per thousand of living births, as compared with 86.3 for the previous year, and may be regarded as satisfactory, when compared with previous years.

The statistics as recorded are an evidence that the health of the city may be viewed with satisfaction.

In the table showing the causes of death amongst children under the age of one year, it will be noticed that out of a corrected total of 259, no less than 110 or forty-two per cent. of the deaths resulted from Malnutrition and Gastro Intestinal Diseases.

These figures exhibit features which demand careful consideration, and would indicate that had the parents of some of these little ones been better informed that at least a considerable percentage of such lives might have been spared.

It is in such cases that the services of nurses trained in Child Welfare, can be of the highest value; such service is available; but on account of the limited number of nurses on our staff, their sphere of usefulness is proportionately curtailed.

The nurses by a faithful discharge of duty, in following up and regulating cases of communicable disease, and administering to the needs of those requiring their services: the Food and Dairy Inspectors, who by a vigilant guard, protect the community against the dangers of unwholesome food, and contaminated or otherwise affected milk supply; the Sanitary Inspectors, by a watchful care, ever on the alert for conditions that may be dangerous or injurious to health, have each contributed their share toward the improvement in our general and infantile death rate.

The Reports from the several Divisions will show the amount of work accomplished during the year; and if they mean anything at all, they surely mean that by the active and preventive measures adopted, not only has the general health of the community been benefitted, but that lives have been saved.

The Chief Medical Adviser of the British Ministry of Health, on one occasion when referring to the suppression of diseases made this statement "No technical device or narrow specific remedy can avail, apart from the sanitary environment of the community, and the sound nutrition of the individual."

It is along this line of thought, and of action, that the activities of all divisions of the Health Department are directed.

COMMUNICABLE DISEASES.

INFLUENZA.

This disease which was so terribly prevalent in 1920, has been, relatively speaking, absent during the year; for only 23 cases have been notified, compared with 4008 in the previous year. All of these cases were reported in the month of February. While it is true that the cause of Influenza has not been determined, nor its specific organism isolated, it is also a fact that the laws controlling its appearance in this place and in that, have not been discovered.

Its comparative absence during the year affords occasion for relief.

Seven deaths were referred to this disease.

CHICKENPOX.

Cases of Chickenpox outnumbered any other disease notified; there being 798 cases so notified.

No deaths resulted from this disease during the year.

SMALLPOX.

Smallpox was fairly prevalent during the first half of the year.

The greatest number occurring in any month, was in the month of january, when 48 cases of this disease were notified.

Only 1 case was reported in July, and no other cases have since been notified.

From the fact that no deaths occurred from this disease, it will be understood that the majority of the cases were of a mild type, although 201 notifications of this disease were received.

There is however as great a danger of infection from a mild case of smallpox as would be possible from a more severe case.

Every care was exercised by the Department in preventing the spread of this disease, and notwithstanding the fact that owing to its appearance in serious proportions in several sections of Ontario, we anticipated that a heavy expenditure might be necessary to bring the disease under control, the vigilance and faithfulness of our staff enabled us to accomplish this with scarcely any disturbance of business and with a comparatively trifling expenditure.

DIPHTHERIA.

Diphtheria has been very insistent throughout the year.

The highest number of notifications received in any month was in October when 111 cases were notified.

In the month of June the least number in any month were received, there being 25 cases notified during the month.

The total number of cases reported during the year amounted to 608.

Of this number 41 cases terminated fatally; affording a percentage mortality of 6.74 of the cases actually reported.

While the number of cases was slightly in excess of the previous year, there being 608 against 596 for 1920, the case mortality was decreased.

It is hoped by a more studious preventive treatment, and curative measures in the early stages of this disease, that the case mortality may be still further reduced.

The great danger in diphtheria is delayed treatment, and neglect of preventive measures to safeguard the well members of a family who have been exposed to infection.

I am anticipating very beneficial results from the proposed establishment of a Toxin-Antitoxin Clinic at the Health Centre in combatting this very dangerous and highly contagious disease.

SCARLET FEVER.

Two hundred and forty-five cases of Scarlet Fever have been reported during the year.

The lowest number in any month recorded at the office was in the month of December, with 30 cases.

Three deaths were referred to Scarlet Fever; giving a percentage mortality of 1.22.

This is a low percentage rate, and compares favorably with the particulars for the previous year, when the mortality rate was 2.4 per cent of 493 cases reported.

TYPHOID FEVER.

Possibly in relation to Typhoid Fever, conditions are more satisfactory than in any other disease.

During the year 21 cases of this disease were notified; 9 of these cases were brought into the city from outside points for hospital treatment, so that only 12 cases occurred amongst Hamilton residents.

MEASLES.

Three hundred and ten notifications for measles were received during the year, as compared with 1846 for 1920.

Measles could not be described as epidemic at any period during the year, as the cases were distributed over 11 out of the 12 months. Sixty cases were notified in the month of September.

Only one case of measles is reported to have had a fatal termination.

WHOOPING COUGH.

Seven hundred and fifty-eight cases of Whooping Cough were notified, as against 315 for the previous year.

Eighteen deaths resulted from this disease and represent a percentage mortality of 2.36.

OTHER DISEASES.

Other diseases will be referred to, in a table at the end of the report, and will include Mumps, Tuberculosis, and Erysipelas.

Tables of diseases under numerous headings will also be found at the end of the report.

SPECIAL REPORTS.

Many Special Reports have been submitted to the Board of Health, and have been disposed of.

Others are under consideration, and I am preparing still others on subjects relating to Health conditions, which will include the Sanitary Inspection of School premises. This report is nearing completion and will be prepared for the consideration of the Provincial Board of Health, and the Board of Education, as well as for the Board of Health. The question of the Medical Inspection of Schools has been touched upon in a cursory way at various times throughout the year.

A Survey of the artisans dwellings throughout the city has been under way for some time.

This Survey is being undertaken by the District Inspectors as time and occasion permit.

We are now comfortably and commodiously housed in the Public Health Building, formerly the Public Library at 20-22 Main Street West, and our Health Centre establishment is partially in existence.

I desire to express my sincere thanks to His Worship the Mayor, to the Board of Control and Members of the Council who have assisted in any way in bringing this work to a successful development.

In concluding my Report I desire to express my high appreciation for the loyal and generous help afforded me, in my capacity as Medical Officer of Health, and a Member of the Board, by the Chairman, Alderman C. Cooper, Controller Davis and Mr. E. Madden, Members of the Board.

I have the honour to be,

Gentlemen,

Your obedient servant,

JAMES ROBERTS,
Medical Officer of Health.

HAMILTON GENERAL HOSPITAL,
November 1st, 1921.

To DR. JAMES ROBERTS,
Medical Officer of Health.

Dear Sir:—

In presenting the report of the City Laboratories as to Board of Health Laboratory Examinations, during the year ending October 31st, 1921, I wish to extend my thanks to yourself and to the Board for your co-operation and help. The year has been a somewhat trying one. There has been a substantial increase in the amount of work, and while carrying on this work it has been necessary to undertake the training of two new technicians. Miss Bowman, who had been on the staff for more than two years, resigned in May, and Miss Campbell, who had had no previous experience in Laboratory technique, was appointed in her place. Miss Davis had undertaken her duties one month earlier and she too came to us inexperienced. It was necessary to train these girls as rapidly as possible and at the same time carry on the increasing amount of work. Thanks to the faithful co-operation of Mr. F. J. Elliott, the Chief Technician and of Miss White, in charge of Records and Reports, we have been able to accomplish this end. The two girls are making splendid progress and it is hoped that the Laboratory may be able to retain their services for some time to come.

I have appended a detailed monthly statement of the year's work, a summary for the year, an analysis of the work done for patients in the Hospital and for the city outside of the Hospital, and a table showing comparative figures for the past five years, as taken from the annual reports of the Board of Health. These latter figures show a steady increase in the service which the Laboratory is rendering. For this year the total figures run to over 15,000 examinations, and as the cost to the Board is not over $5,000.00, it can readily be seen that the Laboratory is rendering a service worth many times the amount expended on it.

Since 1917, Venereal diseases have come under the control of Boards of Health. This has meant a great increase in the number of Wassermann Reactions performed and during the last year the numbers have almost doubled. I think it desirable to point out here that in the case of samples submitted for examination for Venereal disease, it would be much better if doctors would send them in under numbers or initials, rather than under full names. Provision is made for this in the Venereal Diseases Act.

The performance of the Widal Reaction for Typhoid Fever, has confirmed the diagnosis of Typhoid in a certain number of cases, but so far as I have been able to discover, all these are cases which have been contracted at points outside the city. As a routine all samples of blood submitted for Widal Reactions have been tested for their agglutinin reaction toward all three enteric organisms, namely, B. Typhosus, B. Paratyphosus A, and B. Paratyphosus B. We have found two cases of Paratyphosus B. To do this it is necessary to have a larger amount of serum, and hence an outfit, somewhat similar to a Wassermann outfit has been devised.

In the examination of Sputa for Tubercle Bacilli, a Concentration method has been adopted, whereby a large quantity of sputum is digested, centrifuged and films made from the sediment. This reduces the risk of missing organisms to a minimum.

In the examination of Diphtheria cultures there has been also an increase. Virulence tests have been carried out in the case of certain carriers. Samples of milk have been examined throughout the year as to the number and character of their organisms. A start has been made in chemical work, and this will be enlarged upon as rapidly as possible.

During the year there have been a certain number of requests from Doctors in the district for various examinations and reports, and as these did not interfere with the routine they have been complied with. A list of these is appended.

In conclusion, I again wish to thank you and the Board of Health for your co-operation and support during what has been a somewhat trying year and to assure you of a continual effort to improve the Laboratory service.

Yours,

(Signed) WM. J. DEADMAN, B.A.
Director.

REPORT OF THE CITY LABORATORIES FOR THE YEAR ENDING OCTOBER 31st, 1921

	Wassermann Reactions				Spirochaete Examinations			Gonococcus Films			Widal Reactious		
	XXX	Weak	–	Total	X	–	Total	X	–	Total	X	–	Total
November....1920	29	16	127	172	0	0	0	13	105	118	3	12	15
December....1920	27	14	122	163	0	1	1	10	97	107	3	8	11
January......1921	40	21	165	226	0	0	0	16	133	149	3	14	17
February.....1921	22	17	143	182	0	0	0	11	117	128	0	5	5
March........1921	40	24	181	245	1	0	1	23	120	143	3	8	11
April........1921	45	8	232	285	0	0	0	5	128	133	0	17	17
May..........1921	49	5	207	261	0	0	0	5	116	121	0	7	7
June.........1921	37	11	196	244	1	0	1	11	128	139	0	5	5
July.........1921	35	13	202	250	1	1	1	16	135	151	2	15	17
August.......1921	36	12	193	241	0	1	1	26	179	205	8	19	29
September....1921	42	14	221	277	0	1	1	18	155	173	8	38	46
October......1921	38	12	166	216	0	0	0	13	97	110	7	19	26
Total......	440	167	2155	2762	2	4	6	156	1510	1677	37	167	204

CITY LABORATORIES REPORT FOR THE YEAR ENDING OCTOBER 31st, 1921

	Stools for Typhoid			Urine for Typhoid		Sputa for T. B.			Diphtheria Cultures				Milk	Water
	X		Total	X	Total	X		Total	D X	R X		Total	Total	Total
November....1920	1	17	18	0	12	2	37	39	92	0	667	759	10	24
December....1920	0	7	7	0	6	7	70	77	96	0	681	777	0	6
January......1921	0	8	8	0	8	12	72	84	88	74	941	1103	0	29
February.....1921	0	0	0	0	0	7	102	109	51	17	743	802	10	24
March........1921	0	0	0	0	0	6	90	96	42	28	672	742	21	12
April........1921	0	2	2	0	3	6	88	94	52	41	660	753	10	22
May..........1921	0	0	0	0	0	7	70	77	59	66	840	965	18	17
June.........1921	0	0	0	0	0	9	84	93	34	28	653	715	25	32
July.........1921	1	0	1	0	0	7	59	67	45	48	435	528	18	33
August.......1921	1	2	3	0	1	5	69	74	30	12	472	514	28	33
September....1921	0	6	6	0	4	5	59	64	53	16	517	586	24	34
October......1921	0	8	8	0	9	1	55	56	145	117	1139	1401	27	27
Total......	3	50	53	0	43	75	855	930	787	447	8411	9645	191	293

D—Diagnosis. R—Release.

SUMMARY FOR YEAR ENDING OCTOBER 31st, 1921.

		Specimens from Hospital	Specimens from City	Total
Wassermann Reactions		1,573	1,189	2,762
Strongly Positive	440			
Weakly Positive	167			
Negative	2,155			
Spirochaete Examinations		5	1	6
Positive	2			
Negative	4			
Gonococcus		1,271	406	1,677
Positive	167			
Negative	1,510			
Widal Reactions		99	105	204
Positive	37			
Negative	167			
Stools for Typhoid		49	4	53
Positive	3			
Negative	50			
Urine for Typhoid		35	8	43
Positive	0			
Negative	43			
Sputum for T. B.		445	485	930
Positive	75			
Negative	855			
Diphtheria Cultures		4,615	5,030	9,654
Positive(Diagnosis)	787			
Positive (Release)	447			
Negative	8,411			
Milk Examinations		0	191	191
Water Examinations		0	293	293
Total Examinations		8,092	7,172	15,804

BOARD OF HEALTH LABORATORY WORK
COMPARATIVE TABLE FOR FIVE YEARS

	1916–1917	1917–1918	1918–1919	1919–1920	1920–1921
Wassermann Reactions	0	814	1,037	1,599	2,762
Spirochaete Examinations	0	0	10	15	6
Gonococcus Films	0	795	825	1,099	1,677
Widals	148	148	85	194	204
Stools for Typhoid	0	0	0	20	53
Urines for Typhoid	0	0	0	21	43
Sputums	481	501	723	659	930
Diphtheria Cultures	4,476	2,069	4,849	8,261	9,645
Milks	0	0	12	147	191
Waters	300	300	320	320	293
Total	5,405	4,627	7,861	12,335	15,804

BOARD OF HEALTH WORK DONE DURING PERIOD 1-11-20 to 30-9-21 FOR PLACES OUTSIDE HAMILTON.

Place	Wasserman Reactions	G. C. Films	Widals	Sputa	Diphtheria Cultures	Water	Total
Ancaster	0	0	1	1	0	4	6
Aldershot	0	0	0	2	1	0	3
Bartonville	3	1	3	0	0	0	7
	0	0	1	1	0	4	6
Burlington	5	1	0	2	2	0	8
Binbrook	3	0	0	0	0	0	3
Brantford	1	0	0	0	0	0	1
Barton Township	0	0	0	1	6	1	8
Beamsville	1	0	0	4	0	1	6
Bronte	0	0	0	0	1	1	2
Cayuga	8	0	4	1	0	0	13
Caledonia	2	1	1	2	0	1	7
Canfield	3	0	0	0	0	0	3
Dundas	3	1	3	3	5	1	16
Dunnville	2	0	0	1	0	0	3
Delhi	1	0	0	0	0	0	1
Fenwick	1	0	0	0	10	0	11
Flamboro Centre	1	0	0	0	0	0	1
Freeman	0	0	0	0	1	0	1
Grimsby	6	1	1	2	4	0	14
Galt	0	2	0	0	0	0	2
Greenville	0	0	1	0	0	0	1
Jerseyville	0	0	0	1	0	0	1
Hagersville	2	0	0	0	0	0	2
Jordan	1	0	0	0	0	0	1
Jarvis	4	0	0	0	0	0	4
Preston	0	1	0	1	5	0	7
Palermo	1	0	0	0	0	0	1
Sheffield	0	1	0	0	0	0	1
Stoney Creek	3	0	0	0	11	0	14
Smithville	4	0	0	0	0	0	4
Thorold	1	0	0	0	0	0	1
Vinemount	0	0	0	2	0	0	2
Waterdown	3	0	0	0	0	0	3
Welland	2	0	0	0	0	0	2
Winona	2	0	0	0	1	0	3
Wingham	1	0	0	0	0	0	1
Total	64	9	14	23	45	9	164

SHOWING DEATHS FROM COMMUNICABLE DISEASES

From November 1st, 1920 to October 31st, 1921

Diseases	Nov	Dec.	Jan.	Feb.	Mar	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Tot.
Diphtheria	4	4	4	2	4	3	1	1	1	3	4	10	41
Typhoid Fever	....	....	1	....	....	1	....	....	....	....	1	....	3
Scarlet Fever	....	1	....	....	....	....	1	....	....	....	....	1	3
Whooping Cough	2	3	2	3	4	3	....	....	....	....	1	....	18
Erysipelas	....	1	1	1	....	....	1	....	....	2	....	....	6
Influenza	3	1	....	1	1	1	....	....	....	....	....	....	7
Consumption	4	4	4	7	7	3	6	4	6	3	5	1	54
Tuberculosis (other forms)	1	2	2	4	....	2	1	1	2	....	1	1	17
Measles	....	....	....	....	....	....	....	1	....	....	....	....	1
Sleeping Sickness	....	....	....	....	....	....	1	....	....	....	....	....	1
Cerebro Spinal Meningitis	1	....	....	....	....	....	....	....	....	....	....	....	1
Total	15	16	14	18	16	13	11	7	9	8	12	13	152

SUMMARY OF COMMUNICABLE DISEASES

Reported from November 1st, 1920 to October 31st, 1921

Diseases	Nov	Dec.	Jan.	Feb.	Mar	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Total
Diphtheria	66	68	75	44	41	52	34	25	26	26	40	111	608
Scarlet Fever	23	38	27	28	24	20	13	12	3	9	15	33	245
Typhoid Fever	7	1	1	....	2	1	....	....	....	3	5	1	21 X
Tuberculosis	8	7	17	17	15	18	9	25	8	20	13	15	172
Chicken Pox	145	114	163	98	68	55	43	74	15	1	11	11	798
Measles	42	27	41	11	10	45	60	43	20	6	....	5	310
Mumps	9	1	10	8	16	25	19	6	2	1	....	....	97
Erysipelas	1	1	2	1	....	3	2	1	1	1	....	....	13
Smallpox	23	18	48	29	39	27	11	5	1	....	....	....	201
Jaundice (Infectious)	....	3	....	....	....	....	....	....	....	....	....	....	3
Whooping Cough	129	152	174	97	55	33	24	25	25	19	22	3	758
Cerebro Spinal Meningitis	1	....	....	....	....	....	....	....	....	....	1	....	2
Influenza	....	....	....	23	....	....	....	....	....	....	....	....	23
Total	454	430	558	356	270	279	215	216	101	86	107	179	3,251

X Includes 9 Typhoid Fever cases infected outside of the city.

POSITIVE KLEBS LOEFFLER

——	Nov	Dec.	Jan.	Feb.	Mar	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Total
——	..	2	8	6	4	....	16	4	2	1	1	34	78

SHOWING DEATHS FROM COMMUNICABLE DISEASES

From November 1st, 1919, to October 31st, 1920.

Diseases	Nov	Dec.	Jan.	Feb.	Mar	Apr.	May	Jun.	July	Aug.	Sept	Oct.	Total
Diphtheria	4	6	4	1	7	3	3	3	4	4	2	3	44
Typhoid Fever	1	0	1			1	1			1		4	9
Scarlet Fever	1		2	2	1	1		1	2		1		11
Whooping Cough						2	3		3		2	1	11
Erysipelas			1									1	2
Influenza				76	38	3	2		1				120
Consumption	2	5	5	5	6	6	1	7	2	2	2	1	44
Tuberculosis (other forms)	1	2	2	1			2			1		1	10
Measles						3	3	2	1		1		10
Sleeping Sickness		1										1	2
Anterior Polio-myelitis				2							1		3
La Grippe				5									5
Total	9	14	15	92	52	19	15	13	13	8	9	12	271

SUMMARY OF COMMUNICABLE DISEASES

Reported from November 1st, 1919, to October 31st, 1920.

Diseases	Nov	Dec.	Jan.	Feby.	Mar	Apr.	May	Jun.	July	Aug.	Sept	Oct.	Total
Chickenpox	62	41		32	12	11	17	20	8	3	6	83	295
Diphtheria	77	72	70	36	38	44	62	37	19	40	50	51	596
Scarlet Fever	37	56	103	68	75	38	40	21	13	9	9	30	493
Typhoid Fever		4	1		1	2	1		3	6	27	20	65 X
Tuberculosis	9	7	7	8	14	13	18	15	18	8	15	20	152
Measles	2	3	14	14	50	216	383	729	327	68	40		1,846
Mumps	24	84	247	307	296	138	118	45	7	3	7	7	1,283
Erysipelas		2	1	3	3	1	1	2		1		1	15
Smallpox	4	20	15	14	10	4	2	5		2	4	11	91
Whooping Cough	8	5	16	11	16	21	27	22	28	19	57	85	315
Influenza	7	2	413	505	451	1			1				4,008
Cerebro Spinal Meningitis						1				2			3
Poliomyelitis	1										1		2
Sleeping Sickness		1							1				2
Total	231	291	515	3,998	966	490	689	896	425	161	216	308	9,166

X Included 41 Typhoid Fever cases infected outside of the city.

COMPARATIVE TABLE.

Showing causes of death in children under 1 year, exclusive of prematurity and still births.

Malnutrition	51.
Gastro Intestinal Diseases	59.
Nephritis	1.
Malformations	24.
Meningitis	1.
Strangulated Hernia	1.
Cerebro-Spinal Meningitis	1.
Erysipelas	1.
Tuberculosis	2.
Diphtheria	1.
Whooping Cough	11.

Pneumonia & Bronchitis	57.
Tubercular Meninges	2.
Asthenia	6.
Jaundice	1.
Rickets	1.
Myocarditis	1.
Haemophilia	8.
Asphyxia Neonatorum	3.
Tetany	2.
Atelectasis	7.
Injury at birth	9.
Abscess	1.
Otitis Media	1.
Intussesception	1.
Suffocation	1.
Haemorrhage	1.
Uraemia neonatorum	1.
Burns.	1.
Cause not known	2.
	259.

VITAL STATISTICS.

	1920		1921	
	Births	Deaths	Births	Deaths.
November	251	109	250	111.
December	291	142	295	129.
January	301	121	335	138.
February	315	233	308	125.
March	275	220	320	156.
April	317	133	288	128.
May	313	149	314	99.
June	309	128	307	114.
July	275	141	275	129.
August	274	119	285	119.
September	246	126	276	104.
October	240	123	297	120.
	3,407	1,744	3,550	1,472

COMPARATIVE TABLE.

	1920	1921.
Under 1 year	496	471.
From 1 to 5 years	106	84.
From 5 to 10 years	70	42.
From 10 to 20 years	62	49.
From 20 to 30 years	99	74.
From 30 to 04 years	122	87.
From 40 to 50 years	124	114.
From 50 to 60 years	173	121.
From 60 to 70 years	197	163.
From 70 to 80 years	180	155.
From 80 to 90 years	93	96.
From 90 to 100 years	21	16.
Ages not given	1	
	1,744	1,472.

DEATHS.

I. GENERAL DISEASES.

Influenza	7.
Measles	1.
Typhoid Fever	3.

Whooping Cough	18.	
Scarlet Fever	3.	
Diphtheria	41.	
Erysipelas	6.	
Tetanus	3.	
Sleeping Sickness	1.	
		83

TUBERCULOSIS:—

Lungs	54.	
Meninges	10.	
Intestines	1.	
Pertitoneum	2.	
Spine	1.	
Kidney	3.	
		71

CARCINOMA:—

Stomach & Liver	28.	
Intestines	5.	
Breast	7.	
Uterus	10.	
Neck	5.	
Jaw	1.	
Bladder	6.	
Rectum	4.	
Throat	3.	
Ovary	1.	
Pancreas	1.	
Spine	1.	
Not specified	6.	
		78

SARCOMA:—

Thoracic Cavity	1.	
Intestines	2.	
Abdominal	1.	
Brain	2.	
Ovary	1.	
Spine	1.	
Not Specified	1.	
		9

Rheumatism	3.	
Toxemia	2.	
Septicaemia	10.	
Exophthalmic Goitre	6.	
Alcoholism	2.	
Pyaemia	1.	
Anaemia Pernicious	9.	
Anaemia	3.	
Diabetes Mellitus	17.	
Syphilis	1.	
Rheumatoid Arthritis	2.	
Hodgkin's Disease	2.	
Purpura Haemorrhagica	1.	
Cellulitis	1.	
Abscess of Neck	2.	
		62.

II. DISEASES OF THE NERVOUS SYSTEM.

Cerebro Spinal Meningitis	1.	
Meningitis ..	3.	
Cerebral Haemorrhage	29.	
Cerebral Embolism	2.	
Cerebral Tumor	2.	
Paralysis (General)	4.	
Paralysis (Agitans)	2.	
Disseminated Sclerosis	1.	
Epilepsy ..	1.	
Convulsions (Not Specified)	1.	
Cerebral Abscess	1.	
Apoplexy ..	27.	
Hemiplegia ..	3.	
Encephalitis ..	1.	
		78.

III. DISEASES OF THE CIRCULATORY SYSTEM.

Aneurism ..	2.	
Endocarditis ..	21.	
Cardiac Insufficiency	2.	
Chronic Valvular Disease,	15.	
Angina Pectoris	5.	
Arterio Sclerosis	46.	
Myocarditis ..	60.	
Heat Failure	23.	
Varicose Ulcer	23.	
Mitral Regurgitation	10.	
Fatty Degeneration	2.	
Acute Dilatation	4.	
Mitral Insufficiency	2.	
Thrombosis ..	2.	
Heart Failure	16.	
Asthenia, ..	1.	
Haemorrhage (Not Specified)	2.	
		214

IV. DISEASES OF THE RESPIRATORY SYSTEM.

Bronchitis	18.	
Broncho Pneumonia	54.	
Lobar Pneumonia	36.	
Hypostatic Pneumonia	1.	
Pleuro Pneumonia	4.	
Pneumonia	80.	
Empyema	2.	
Asthma	3.	
Pulmonary Abscess	3.	
Toxemia	2.	
Pleurisy	2.	
		205

V. DISEASES OF THE DIGESTIVE SYSTEM.

Duodenal Ulcer	4.	
Appendicitis	9.	
Peritonitis	6.	
Strangulated Hernia	1.	
Cirrhosis of the liver	5.	
Intestinal Obstruction	11.	
Ileo Colitis	2.	
Gastritis	2.	
Gastro Enteritis	3	
Gastric Ulcer	2.	
Cholecystitis	2.	
Enteritis	1.	
Colitis	1.	
Convulsions (Not Specified)	1.	
		50

VI. Diseases of the Genito-Urinary System.

Nephritis	45.	
Bright's Disease	9.	
Uremia	5.	
Salpingitis	2.	
Uterine Fibroid	2.	
Cystitis	3.	
Prostatic Hypertrophy	3.	
Albuminurea	1.	
		70

VII. Diseases of Puerperal State.

Eclampsia	1.	
Abortion	2.	
Septicaemia (Childbirth)	4.	
Childbirth	2.	
Post Partem Haemorrhage	1.	
Caesarean Section	1.	
		11.

VIII. Diseases of the Skin.

Gangrene (Foot)		4.
		4

IX. Diseases of the Bones.

Mastoiditis	3.	
Rickets	2.	
		5

X. Malformations.

Congenital Heart	2.	
Spina Bifida	8.	
Hydrocephalus	1.	
Malformations	2.	
		13

XI. Diseases of Early Infancy.

Malnutrition	53.	
Gastro Intestinal Diseases	67.	
Intussusception	1.	
Status Lymphaticus	1.	
Congenital Debility	8.	
Patent Foramen Ovale	5.	
Strangulated Hernia	1.	
Asthenia	6.	
Atelectasis	7.	
Still Births	168.	
Premature	44.	
Injury at Birth	9.	
Jaundice	1.	
Otitis Media	1.	
Abscess	1.	
Meningitis	2.	
Myocarditis	1.	
Uraemia Neonatorum	1.	
Haemophilia	8.	
Asphyxia Neonatorum	3.	
		388

XII. Diseases of Old Age.

Old Age	27.	
Senile Decay	22.	
Adyamic causes	1.	
Senile Dementia	3.	
		53

XIII. External Causes.

Accidental injuries:—Falls, Burns, Poisoning	28.	
Murder	4.	
Drowning	4.	
Suicide	12.	
Fractures	5.	
Hanging	1.	
Killed:—Train, auto, street car, etc.	11.	
Suffocation	1.	
Post Operative	5.	
		71

XIV. Ill-Defined Causes.

Heat Prostration	3.	
Cause not known	3.	
Cause not given	1.	
		7

Report of Visiting Nurse Dealing With Tuberculosis.

James Roberts, Esq. M.D.
Medical Officer of Health.

Sir:

Below please find report from the down town dispensary of the Sanatorium. for the year ending September 30th, 1921.

During the past year no change has been made in the method of carrying on this most important branch of an Anti-tuberculosis Dispensary. Three clinics have been held each week—Monday, Wednesday and Friday afternoons, where patients suffering from any form of chest disease can be examined free of charge. Patients unable to afford a physician have been given an outline of treatment, medicine and supplies, as the case required.

Twelve hundred and seventy-four patients were examined at this clinic; of this number 595 were new cases; 679 re-examinations were made; 221 patients came for medicine and advice. 598 supplies of paper handkerchiefs, sputum and educational pamphlets have been given to patients under treatment in their own homes.

The visiting nurse made 1690 calls during the year, of these 1127 were return calls to patients under observation or supervision. 417 were to new homes and 146 were miscellaneous calls.

During this year the co-operation of those having public health and public welfare at heart, has been very encouraging but more than this has been the encouragement from the co-operation of those visited, without which almost nothing can be done along preventive lines.

It is in the home where the work of the visiting nurse is most important. Tuberculosis is a preventable disease and curable in practically every case, where treatment can be undertaken in the incipient stage; even patients moderately advanced may be cured if treatment and advice are followed conscientiously.

A visiting nurse with sympathy and understanding is able to impart useful knowledge possessed by her, to those who need it most. An ever present watchfulness, caution, cleanliness, sunshine, fresh air and cheerfulness to those who are sick and to those who are well; proper feeding of children, proper rest and work, with advised recreation for growing boys and girls, are essential factors in a successful combat with this disease. The necessity for instruction along these lines, is evident in many homes of the city at the present time.

Two hundred and forty two children were examined at our dispensary during the year; 59 of these were found to be affected with active pulmonary tuberculosis; 52 were incipient cases; 6 moderately advanced and one was a far advanced case. Of the remaining 183 many were found to be suffering from malnutrition. Practically all were below par physically, and in any case where a visit to the home revealed the lack of nourishment, as the underlying cause, the Junior Health League have supplied from 1 to 2 quarts of milk daily; and it has been interesting to note gain in weight and general improvement in a surprisingly short period of time.

Ninety-five dollars have been withdrawn from the Miss Juliette Doolittle fund, to supply eggs and fruit to these children; and a few delicacies for patients confined to their beds.

From the 1274 examinations made, 151 persons were found to be affected with active pulmonary tuberculosis: incipient cases, male 12 and female 13, children 52. Moderately advanced, male 20, female 16 and children 6. Far advanced, male 25, female 16 and children 1.

One hundred and thirteen patients were recommended for sanatorium treatment, 172 are suspected cases and have been kept under observation.

Owing to the lack of accommodation at the sanatorium there has been a waiting list of men, women and children throughout the year.

Sources of reference to the Dispensary have been as follows: -

Physicians,	237.
School nurses,	61.
Self or friends,	290.

Patients with positive sputum reported from the City Laboratory totalled 86. Expenditure for the upkeep of the dispensary amounted to $29.87. Money obtained from the sale of thermometers and medicine, $36.00; cash in box, $9.78.

Balance from 1920, $1.762, leaving a balance on hand of $34.03.

Respectfully submitted.

REPORT OF THE DENTAL CLINICS.

To: JAMES ROBERTS, ESQ. M.D.
Medical Officer of Health.

Sir:—

The Annual Dental Inspection of the Public Schools of Hamilton, recently completed shows a great improvement in the condition of children's teeth, which must indeed be gratifying not only to those in charge of the actual treatment of the children but to the Board of Health who have fostered this movement, for the benefit of our future citizens.

Too much stress cannot be laid on the importance of the work, and the public is realizing more and more, the great asset of clean and healthy mouths not only from the health standpoint but from the viewpoint of comfort and decency for the individual as well.

During the past year we have had 2,810 children treated in the two Dental clinics, apart from the examination of the 18,000 pupils attending the public schools. A detailed report of the dental defects of every child has been sent to the parents, and if treatment is desired at the Board of Health Clinics, the parent's signed request is all that is necessary for the child to gain access to the Clinics.

At the present time the request cards have not been returned from all the schools, so that for the present survey an approximate estimate only of the number of children awaiting treatment can be given. This is put at four thousand and if the survey were followed up in the homes this number would be materially increased.

The initial inspection made in 1919, showed over ninety per cent. of the pupils with defective teeth. The 1921 inspection shows less than seventy-five per cent of children's dentition needing attention. While there is still much neglect this is a vast improvement.

The opening recently of a third Clinic in the new Health Centre will help matters greatly, and reach many cases it has been impossible to care for at the Clinics in the King George and Caroline Schools.

REPORT OF THE DIVISION OF SANITARY INSPECTION FOR THE YEAR ENDING OCTOBER 31, 1921.

JAMES ROBERTS, ESQ. M.D.
Medical Officer of Health.

Sir:—

I have the honour of submitting the following Report in connection with the work accomplished by the Division of Sanitary Inspection of the Health Department of the City of Hamilton for the year ending October 31, 1921.

The work accomplished by this Division is tabulated under the following headings:—

Complaints.

Complaints received at the office and attended to 1912.

Notices.

Statutory Notices Served	2608	
Verbal, or Informal Notices	3185	
Total number of Notices	——	5793

Premises Inspected.

The various premises inspected during the year are classified as follows:—

Dwelling houses	7873
Tenements and Apartments	1121
Hotels, Lodging, Boarding and Rooming houses	925
Work-shops, Factories and Offices	522
Restaurants and Stores	655
Stables	601
Laundries	529
Second hand stores and junk yards	251
Yards, Sheds, Areas, Out Buildings and Alleyways	8106
Vacant lots	402
School and Public Buildings	241
Miscellaneous Premises	1001
Inspections of Premises by District Sanitary Inspectors, after notification of cases of Communicable Diseases	12020
No. of Inspections	34247
No. of Re-Inspections	5913
Total of Inspections and Re-Inspections	40160

Nuisances or Sanitary defects removed or abated.

During the process of inspecting the above premises, various nuisances or sanitary defects, more or less prejudicial to health were discovered; these have practically all been removed or abated during the year.

In some instances the works required had not been completed at the close of the year; but as a few of such or similar cases had been left over from the preceding year, and completed during the year, to which this Report relates, there is practically no difference in the net total.

For the purpose of tabulation and comparison, particulars relating to Plumbing are recorded apart from other Sanitary defects.

Plumbing defects, or lack of adequate plumbing discovered and remedied during the year:—

Defective or Choked Drains	514
Choked or defective wash basins and urinals	333
Defective Soil-pipes, water closets, waste pipes and other Sanitary fittings	601
Insufficient ventilation	183
Frozen plumbing	25
Defective, or lack of eavetroughs and rain water leaders	753
Insufficient or improper plumbing fixtures	266
New plumbing installed, in premises, invariably involving the removal of privies or earth closets	649
Total of plumbing defects discovered and remedied	3,186

Sanitary defects, (other than plumbing) discovered and remedied:—

Dirty yards, Courts, Sheds, Areas and Alleyways	3369
Dirty walls, ceilings and surroundings of dwellings	2188
Inadequate natural light for premises	84
Insufficient ventilation	183
Keeping animals in or too near dwellings	542
Lack of proper receptacles for manure, garbage or trade waste	968
Accumulations of manure or other refuse	956
Defective and Insanitary cellars or basements	558
Dilapidated and generally insanitary dwellings or other premises	82
Insanitary conditions in Factories, Workshops or offices	135
Insanitary conditions in Halls and Theatres	43
Insanitary conditions in Schools or Public buildings	17
Overcrowding	76
Defective chimneys	161
Defective roofs	528
Defective gas stoves and fittings	113
Defective furnaces or stoves	75
Earth closets or privies	2074
Miscellaneous defects	975
Total	13127
Plumbing defects brought forth	3186
Total of all defects remedied	16313
Cases reported for prosecution	5

Drain testing. The following particulars relate to the testing of drains:—

Positive results	30
Negative results	11
Total number of drains tested	41
Positive percentage	73.2

Smoke Nuisances:—

Particulars relating to smoke nuisances are recorded in a Special Report on this Subject.

Special reference to the work accomplished by the Division of Sanitary Inspection is made by the Medical Officer of Health.

I have the honour to be,
Sir,
Your obedient servant,

W. F. Thornley,
Chief Sanitary Inspector.

Summary of work done by the Inspectors in Quarantine and Isolation:

Houses placarded owing to presence of scarlet fever	92
" " " " " " diphtheria	176
" " " " " " measles	249
" " " " " " smallpox	109
Houses renovated after diphtheria; patient sent to C. H.	285
" " " scarlet fever, patient sent to C. H.	104
" " " tuberculosis, patient sent to Sanitorium	49
" " " smallpox, patient sent to Isolation Hospital	11
Miscellaneous renovations	23
Clothing renovated after smallpox	32
Houses renovated after diphtheria cards removed	169
" " " scarlet fever cards removed	94
" " " smallpox cards removed	114
Measles cards removed	256
No. of visits in connection with smallpox contacts	1329
No. of visits in connection with quarantine and isolation	1403
No. of investigations of cases where persons were bitten by dogs	17

REPORT ON SMOKE NUISANCES, THEIR ABATEMENT AND PREVENTION, FOR THE YEAR ENDING OCTOBER 31, 1921.

JAMES ROBERTS, ESQ. M.D.
Medical Officer of Health.

Sir:

I have the honour of presenting my Report on Smoke Nuisances in the City of Hamilton, and particulars relating to the abatement or prevention of such nuisances, together with other information and direction appertaining to the abatement of smoke nuisances during the year ending October 31st, 1921.

The following is a record of the action taken with this end in view, during the year:—

No. of observations taken of chimneys and smoke-stacks	403
No. of inspections made of power-plants, boiler rooms, boiler equipment, fuel supply, including visits for testing smoke preventing apparatus..	474
Total of obversations and inspections	877
No. of Statutory or Informal Notices served	233

In cases where Notice has been served, the nuisance has either been abated or improvement effected, with few exceptions.

In the report for the four months ending October 31st, 1920, it was recorded that development had been effected at 29 premises; this number has been augmented by more than double during the year to which this report relates.

The following represents the principles which have been acted upon to effect the purpose in view:

(1) Pulverized fuel:

The results obtained being eminently satisfactory where this principle has been adopted. Coal being passed through a pulverizer, from which it is sprayed over an incandescent surface; this ensures the temperature of the fuel being instantaneously raised to the ignition point, so effecting chemical combination and immediate distillation of the volatile gases from the fuel.

(2) Mechanical Stokers.
  (a) Sprinkled feed.
  (b) Underfeed.

By the Sprinkler method, the fuel is fed into hoppers from which, by a mechanical action the fuel after being crushed to the correct size is sprinkled over the live or incandescent surface of the fire.

The Underfeed method may be briefly described as follows:

The fuel bed consists practically of three separate layers.

The bottom layer is forced up from below.

The centre layer is the coal, in what is known, as the coking stage, and forms the carbonaceous portion of the coal; the hydro carbons having passed through the upper layer. The upper layer forms the incandescent fire bed.

The same formation is maintained throughout, each layer passing into the various stages as the green or fresh fuel is forced from beneath.

Air is forced through the tuyeres in the centre layer, and escapes through the incandescent mass composing the top layer, and instantly combines with the gases released in distillation, and forms the heat constituents in the fire zone, and results in as near perfect combustion as is possible, for the air combines with the liberated gases at the correct point, and in proper proportions.

By the Underfeed method, waste of fuel is reduced to a minimum: for the fuel and air supply being under automatic control, and governed by the steam pressure, not more than the requisite amount of coal is introduced into the furnace, than is necessary to maintain the required pressure.and the correct supply of air to ensure complete combustion.

It is to be hoped that the underfeed principle of automatic stoker will be more widely adopted during the ensuing year than obtains at present.

(3) It is gratifying to note that a large number, of top feed, sprinkler, chain grates and other forms of mechanical stokers are now in operation in the city.

(4) Another type of smoke preventing equipment installed during the year, is the alteration of the furnace, and high power fans provided for forced draught.

By this system it is possible to use a mixture of bituminous slack, and hard coal screenings of buck-wheat size of anthracite coal. The success of this principle as a smoke preventer, has proved more or less precarious.

When the correct proportion of the different grades of fuel is maintained, excellent results have been attained, and positively no objectionable smoke evolved. Insufficient care on the part of the fireman in establishing correct proportions, invariably results in objectionable emissions from the chimney, and a subsequent visit to the boiler room from the Inspector.

(5) A large number of boilers have been equipped with other more or less efficient smoke-preventing devices: such as steam jets, hollow brick arches, fire clay cavity bricks, or a combination of these devices.

The efficiency of such equipment depends on the amount of care exercised by the firemen in the adjustment of same; even when the steam control is regulated by a dash-pot device, owing to neglect in some small detail by the firemen, smoke has been in evidence from what should be, if proper care had been exercised, a smokeless chimney.

(6) For heating plants however, particularly where low pressure boilers are in use, it has not been considered necessary to provide smoke-preventing equipment for such boilers.

At least 95 per cent. of the smoke evolved in the city is occasioned by the use of bituminous or soft coal; all of which is imported from the United States.

In all of such cases, where improvement has been effected, such improvement has been the result of substituting semi-bituminous or some kind of non-smoke-evolving coal for the bituminous article.

(7) In some premises, particularly in several public buildings, down draught furnaces have been provided.

Some of these are adapted for the use of bituminous coal; if great care in firing be exercised, it is possible for this coal to be used without a smoke nuisance being occasioned.

(8) Fuel oil is also being used in at least three factories in this city.

It is hoped that when a supply of fuel oil can be positively assured in the city, that more general use will be made of the same for heating and blast purposes.

While great improvements in smoke conditions in the city have been made during the past year, there still remains much to be accomplished in smoke abatement, before conditions may be described as satisfactory.

Very slight if any opposition has been encountered in dealing with these conditions; it has been the general experience of the Department to find owners of premises where smoke nuisances have been in evidence, anxious to co-operate with the Department in making the City of Hamilton a smokeless city.

The Chamber of Commerce has gone on record along these lines, by appointing a Committee to keep in touch with the Health Department, and render all possible assistance with this end in view.

The Railway Companies, whose locomotives operate in and pass through the city, are still making progress in smoke prevention.

The improvement however is by no means as pronounced as could be desired.

The Department will continue to deal with these Companies until satisfactory results are obtained.

It is worthy of note that in obtaining the results above recorded, no magisterial proceedings have been instituted during the year.

It is hoped that such action may still be avoided.

There are however isolated cases where considerable indifference to authority has been evidenced, and it might be found necessary to deal with these cases through the Courts before the desired results are obtained.

In many instances large sums of money have been spent in providing smoke-preventing equipment.

Not a single case has been reported to the Department, where any regret has been expressed for such outlay.

On the contrary, expressions of gratification have been heard on account of the satisfactory results obtained by practically any means that had been adopted for smoke prevention.

One proprietor of a large business concern, stated that in addition to other satisfactory conditions resulting, a saving of at least one third in his coal bill had been effected; such experiences constitute an evidence that no hardship is occasioned to any person when required to abate a smoke nuisance.

It is hoped that during the ensuing year, in all premises where bituminous coal is still being used, the owners of the same will either suitably equip the boilers with smoke-preventing apparatus, or discontinue the use of such coal in favour of a non-smoke-evolving fuel.

Complaint has frequently been made by owners of such premises, that their fuel contractor has been unable to supply a good Semi-bituminous coal.

Coal Merchants throughout the city will be well advised to see that their yards are well stocked with such fuel in future.

Bituminous coal for the future, will only be suitable for boilers properly equipped for the use of same.

I have the honour to be,
Sir,
Your obedient servant.

W. F. Thornley,
Chief Sanitary Inspector,
Smoke Inspector.

DIVISION OF FOOD INSPECTION.

To: James Roberts, Esq. M.D.
Medical Officer of Health.

Sir:—

I submit for your consideration the report on Food and Dairy Inspection for the year ending October 31st, 1921, as follows;

During the year just past I attended, together with yourself, several meetings of the Board of Control in order to emphasize the necessity of passing the Pasteurization By-Law which has on different occasions been recommended by the Local Board of Health, to the City Council.

At the present time something over thirty thousand quarts of milk, varying somewhat throughout the year, are sold in Hamilton. Of this quantity only about 175 gallons are unpasteurized so that we have really accomplished by ten years of education what otherwise would have required statutory enforcement. However we hope during the coming year to have our contemplated by-law adopted by the Council in order that necessary supervision over pasteurizing plants and their equipment may be strictly maintained and the process of pasteurization carried out in a thoroughly scientific manner.

Some attempt has been made rather insistently throughout the year to alter existing regulations, with reference to the shortage of milk in shops and stores.

We feel satisfied that in the interest of the consumer these regulations from a sanitary standpoint are necessary and are being enforced in a reasonable way. We view therefore with satisfaction the decision of the City Council to maintain an attitude of non interference with existing milk legislation.

Following is a summary of inspections made and notices served by my department:—

TOTAL NUMBER OF INSPECTIONS	7,891
Inspections of Central Market	234
" " butcher shops	251
" " abattoirs	13
" " fruit and vegetable stores	432
" " butter and egg stores	10
" " grocery stores	131
" " ice cream premises	148
" " candy kitchens	56
" " bottling works	33
" " restaurants and lunch rooms	823
" " fish stores	24
" " bake shops	194
" " food storage warehouses	6
" " poultry stores	11
" " cattle being slaughtered	3
" " sausage factories	3
" " city dairies	540
" " milk depots	562
" " milk wagons	167
" " dairy farms	1,679
" for licenses—milk, butcher, restaurant, etc.	441
No. licenses refused (various)	60
" milk samples tested (chemicals)	1,494
" milk samples tested (bacterial)	190
" milk temperature taken	872
" cream samples tested	21
" sediment tests made of milk	1,123

" times weighing market products	64
" complaints re food investigated	25
" summons issued	6
" attendance at police court	5
" miscellaneous inspections in connection with various communicable diseases	2,500

Notices Were Served as Follows:—

Notices to clean premises where food is sold or stored	515
" " " milk wagons	10
" " " milk depots	19
" " " milk dairies	94
" " " dairy cows	58
" " limewash cow stables	150
" " build milk houses	57
" " take out milk licenses	62
" " remove animals from stable	66
" " remove manure from stable	7
" " screen food premises	33
" " provide proper ice box for milk	23
" " abolish roller towels from restaurants	4
" " provide individual sanitary butter tasters	23
" " cover and protect food-stuff	179
" " re light weight foods	5
" " marking fruit baskets	23
" " high bacterial count of milk	12
" " high temperature of milk	161
" " low chemical test of milk	53
" " sediment in milk	56
" " cancelling milk licenses	5
" " refusal of dairy farm license	4

Seizures:—

No. lbs beef	2.050
" " pork	240
" " chickens	36
" baskets fruit	16
" potatoes in storage (carload)	2

I have the honour to be,

Your obedient servant,

C. Shain.
Chief Food Inspector.

To: James Roberts, M.D.
Medical Officer of Health.

Sir:

I have the honour to submit the following report on my work, as Dairy Farm Inspector, from December 1st, 1920 to October 31st, 1921.

During the above mentioned period the number of producers who shipped milk to the City of Hamilton, varied from 400 to 440; the milk being shipped mostly from within a radius of twenty miles.

Little difficulty is experienced by local dealers, in obtaining a sufficient supply of milk, as a list of producers is always available in the event of an inadequate supply.

The number of visits to Dairy Farms during the year was 1,797, some of the farms being visited more frequently on account of existing conditions, which required improvement.

Eleven producers were excluded from shipping milk to the city, for not complying with the city regulations.

Improvements on Dairy Farms within the past year were made as follows:—

Number of milk houses built	64
" " barns built	5
" " milk houses under construction	4
" " milk houses being repaired	15
" " stables being repaired	10
" " stables whitewashed	322
" " inspections for dairy farm license	94
" " milk licenses refused	3
" " temperatures taken of milk	807
" " licenses cancelled	8

NOTICES WERE SERVED AS FOLLOWS:—

Notice to build milk houses	116
" " repair milk houses	18
" " repair stables	13
" " remove hogs from stable	65
" " remove fowl from stable	6
remove accumulations of manure	19
" " clean cattle	70
" " whitewash stables	328
" " discontinue use of milk on account of disease in herd	2
" on account of sediment in milk	110
" on account of high temperature of milk	337
" on account of low test of milk	24

Respectfully submitted,

J. T. ARRELL,
Dairy Farm Inspector.

REPORT ON SOCIAL SERVICE AND ATTENDANT WORK IN CONNECTION WITH THE CONTROL OF VENEREAL DISEASES.

JAMES ROBERTS, ESQ. M.D.
Medical Officer of Health.

Sir:

I submit for your consideration my report on Social Service for the year ending October 31st, 1921.

The examination and treatment of patients have been conducted at, and controlled from the Venereal Disease Clinic, at the General Hospital.

Investigation of cases, advice to parents and a considerable amount of the work leading up to and following or subsequent to treatment at the Clinic has been conducted from the offices of the Health Department.

Towards the end of the year, separate offices were allotted to the Social Service section of the Health Department.

These offices are well equipped; and are conducive, on account of assured privacy, to an exchange of confidences with the Social Service Nurse, resulting in the discovery of conditions necessitating treatment at the clinic and, affording help in other directions, which would not be possible except for such confidences.

From a careful study of social conditions in the City of Hamilton and as a result of investigation into the history of cases reported for treatment at the clinic, it is safe to assert that ignorance and folly are principally reponsible for the ravages occasioned by the diseases under consideration.

Investigation has revealed the fact that young people in their teens have contracted the disease as a result of ignorance regarding sex.

Such a disaster would, and could have been prevented, if the parents of these young people had by judicious teaching and timely counsel, advised them as to the wisdom of forming habits of self control and to the danger involved in acts of indiscretion.

Several young girls have been interviewed at the office and at the gaol, some of them only sixteen years of age.

The only instruction any of these girls received was from their associates.

It is not impossible to believe that if the mother of these girls had carefully instructed and advised them at the crucial period of their lives, many and possibly all of them might have been saved from the shadow that has fallen across the path of their young lives.

For it is in the home, by the mother to the daughter and by the father to the son, where such advice and directions can be expected to produce beneficial results.

It is impossible to estimate how much of the wastage of manhood and womanhood and childhood from the ravages of Venereal Disease might be prevented if parents would more fully realize the responsibility which is incumbent upon them to impress upon their children in early adolescence the stern necessity of avoiding all appearances of evil and carefully explaining the evils implied as only parents are capable of so explaining.

The following constitutes a summary of the work accomplished in connection with the Venereal Diseases Clinic at the General Hospital during the year.

Five hundred and fifty-nine patients reported for treatment. Of this number four hundred and seventy-four were new patients, and eighty-five were carried over from the previous year.

Seventy of these were found to be non-venereal, or patients who reported for examination as to freedom from venereal diseases.

Total No. under treatment	559.
for Syphilis	225.
for Gonorrhoea	183.
Non Venereal patients	70.

The Syphilis Cases Were as Follows

Primary Syphilis	male	21	female	20	total	41
Secondary “	“	52	“	33	“	85
Tertiary Syphilis	male	63	female	20	total	83
Congenital “	“	5	“	6	“	11
Acquired under 16 years	“	0	“	5	“	5
Total						225

Gonorrhoea Patients.

Acute Gonorrhoea	male	51	female	25	total	76
Chronic “	“	79	“	19	“	98
Children “ under 10 years	“	0	“	9	“	9
Total						183

Gonorrhoea Patients Discharged.

(a)	Probably cured	male 37	female 13	total 50
	Children	" 0	" 3	" 3
	Total			53
(b)	Transferred for treatment elsewhere	male 38	female 2	total 40
	Children	" 4	"	" 44....
	Total			44
(c)	Discharged without permission	male 33	female 6	total 39

Syphilis Patients Discharged.

(a)	Probably cured	male 1	female 0	total 1
(b)	Transferred for treatment elsewhere	male 20	female 9	total 29
	Children			1
	Total			30
(c)	Discharged without permission	male 24	female 18	total 42

Of congenital cases treated only one gave negative report.

Number of patients pregnant 8

Of these 6 were syphilis, and 2 gonorrhoea patients.

The syphilis patients were under treatment previous to confinement.

Result at confinement . . . . 4 living births.

One child died at three months old.

Others are gaining and apparently well.

Four treated cases had negative Wassermanns just previous to confinement.

Two of these cases had strongly positive Wassermanns after confinement.

Two of these cases had negative Wassermanns after confinement.

Of the eight pregnancies, five were illegitimate.

One gonorrhoeal pregnancy, the baby died at seven weeks; this was a feeding case.

Six cases were admitted following confinement; no treatment for syphilis prior to confinement. Three of these cases were illegitimate pregnancies. Of these, there were four still-births and two living-births.

The unemployment situation has a great deal to do with the irregular or non-attendance of many of the patients. In following up these cases it is found that they belong to the transient section of the population. They do not always give their correct names, and are sometimes unknown by name to owners of rooming houses. No name has however been taken off the books for non-attendance until an attempt has been made to locate the delinquent. Many have left the city in quest of work elsewhere.

There have been several temporary reactions while at the clinic following phenarsenamine treatment; two severe reactions necessitating hospital treatment. There were also two cases of jaundice and one case of arsenical dermatitis. There has been no absence from work or confinement to bed as a result of treatment, with the exception of the two cases mentioned.

The records show that when mercury was given intramuscularly in conjunction with the arsenical preparations, better results were obtained.

Patients treated with phenarsenamine only, did not give negative Wassermanns for more than three months, although all clinical symptoms had disappeared. Eleven patients had negative Wassermanns periodically during the year. Neo diarsenol and mercury were given to these patients and later phenarsenamine and mercury. Practically identical results were obtained by the use of one as the other, with probably more temporary reactions from phenarsenamine than neo diarsenol.

It might be mentioned that three of the girls interviewed at the gaol were returned to the Mercer Reformatory, while five of the girls reporting at the clinic were also sent to the same Institution during the year.

CONCLUSIONS.

There is at the present time no institution in the city where girls who have erred, can be cared for, until provision can be made to give them a fresh start in life; or where girls remanded at the Police Court can be detained, except at the gaol. Such an institution is most desirable.

If such an Institution, or Home for Girls, were established in addition to the practicability of dealing with erring girls and those remanded from the Court, it would be possible to afford at least temporary shelter to many girls who may be stranded in the city without proper care, or for those who may be homeless or worse than homeless, in our city.

There is also a great need for an Infant's Home, for the care of such cases that may not be accepted at the Children's Home on account amongst other reasons, of the inadequate accommodation.

I have the honour to be,
Sir,
Your obedient servant,
AGNES HAYGARTH.
Social Service Nurse.

REPORT OF THE PUBLIC HEALTH NURSES FOR THE YEAR ENDING OCTOBER 31, 1921.

JAMES ROBERTS, ESQ. M.D.
Medical Officer of Health.

Sir:

It will be observed by reference to the table regarding the work accomplished by the Public Health Nurses, that 7,466 visits to homes, and schools, were made by us during the year.

As in other branches of Public Health work, we find it exceedingly difficult, if not impossible to record our work by statistics.

It is an established fact that the Public Health Nurse of to-day is taking her place in the front rank of organized effort directed towards the prevention of disease and the improvement of health conditions generally.

It is therefore necessary that if she is to be of the greatest assistance to the community, in such prevention of disease and improvement in health conditions, she should be thoroughly trained in her work; so that not only is it incumbent on her to be helpful to the sick and suffering, but to be essentially a health teacher in the home, the workshop and the school.

During the past year our work has been of a varied, and frequently, complex nature.

The table will show the number of homes and schools visited for communicable diseases; the number of cultures taken in connection with Diphtheria, of which 4,197 of such cultures were taken; of 1,800 school children examined in the class rooms for possible Scarlet Fever and Diphtheria infection, in addition to the taking of cultures.

It may be noted that during the examination of children in the schools, cases were discovered where membrane was actually in evidence; these children were promptly sent home, and immediately followed to the homes by nurses, where other members of the family were found to be infected.

These were invariably unreported cases; and had they not been recognized by the Nurses, would have become centres of infection with possible far-reaching results.

The other items in the table worthy of special mention are that 4,637 children were attended to after vaccination; 276 children examined for the possibility of a smallpox rash; assisting at the vaccination of 2,229 persons; 1,350 visits to homes for smallpox and vaccinations were made.

In visiting the homes of the people in connection with communicable diseases, vaccinations, child welfare, pre-natal work and for other reasons we have found no difficulty in dealing with the well informed in health matters; what few difficulties we have experienced in our work, have been amongst the foreign element in our midst, or those who might be described as being somewhat below the average in ordinary intelligence.

It is on such occasions that the tact, careful forethought, and knowledge of human nature, positively necessary elements in the disposition of a well trained Public Health Nurse, are put to the test.

Our visits to the homes of the people are principally in connection with communicable diseases, not only do we leave printed instructions as to caring for patients, regulations as to quarantine and isolation, but such information as is contained in the printed matter is invariably amplified by the nurse, and opportunity is generally afforded to advise the occupants of the premises as to the proper feeding of children, the necessity for sunlight and ventilation in the homes, the advisability of proper recreation, sleeping and meals; and other matter relating to health conditions.

The nurse is also afforded an opportunity of inspecting sanitary conveniences, and noting insanitary conditions; such conditions are invariably reported to the Division of Sanitary Inspection, who promptly attend to all such cases so reported.

During the course of these visits, we have on many occasions discovered diphtheria carriers. In all case of diphtheria notified to the Department every effort is exercised to trace the infection to its source.

This source is frequently found to be a more or less recent mild or unrecognized case, such an individual who might be apparently well; and unknown even to members of the household would be carrying virulent organisms of diphtheria in his nose or throat; he might be doing so, for long periods, or until discovered by the Public Health Nurse when visiting the home.

When such a carrier is discovered, he or she is kept under close observation, and treated practically the same as a patient convalescing from diphtheria. Cultures are taken at regular intervals, and the person is not released until at least two successive negative cultures can be obtained.

The Public Health Nurse is also useful in Child Welfare and pre-natal work.

It is here that the nurse is able to be of great service to young and inexperienced mothers.

It will be noticed from the record of visits, that the homes of 232 persons were visited in connection with Baby welfare work during the year.

We have noticed in our visits on such occasions, that the advice and direction of medical experts is frequently necessary, and reveals the positive necessity of a Child Welfare, and Pre-natal Clinics.

We earnestly hope that such Clinics will be established in connection with the Health Centre of the City Health Department at the earliest possible date.

When such Clinics are established, opportunity for even better service than has been hitherto possible, will be afforded for the Public Health Nurses, in their attention to infants and expectant mothers.

Respectfully submitted,

FLORENCE TORREY,
ANNIE B. BOYD,
CATHERINE G. HARRLEY,
Public Health Nurses.

RECORD OF VISITS BY THE PUBLIC HEALTH NURSES FOR THE YEAR.

No. visits re Measles	290
" " " Diphtheria	1465
" " " Scarlet Fever	631
" " " Mumps	82
" " " Chickenpox	811
" " " Whooping Cough	477
" " " Influenza	53
" " " Impetigo and Scabies	433
" " " Tuberculosis	58
" " " Typhoid Fever	39
" " " Smallpox and Vaccinations	5146
" " " Scarlet Fever releases	92
" " " Instructions as to Quarantine and Isolation	288
" of Diphtheria Cultures taken	4197
" " Re-visits to homes	387
" " School cards issued	172
" " Children examined for return to school after vaccination	4637
" " School children examined re Scarlet Fever and Diphtheria	1860
" " Positive K. L. found in schools	156
" " Homes inspected for insanitary conditions	326
" " Baby Welfare visits	232
" " Visits to Baby Farms	20
" " Visits to Maternity Homes	31
" " Miscellaneous calls	596
" " Hours T. B. Clinic	86
" " " V. D. Clinic	75

INGERSOLL

To the Chairman and Members of the Local Board of Health.

Gentlemen:—

I beg to submit my annual report for the year commencing Nov. 16, 1920, and ending Nov. 15, 1921.

The communicable diseases reported were as follows:—

Diphtheria	21
Smallpox	30
Typhoid	5
Syphilis	5
Gonorrhoea	1
Measles	1
Tuberculosis	3

The diphtheria cases were quarantined in their homes with the contacts, and each home afterwards properly fumigated.

It was also necessary to quarantine the smallpox patients and contacts in their own homes as we have no proper Isolation Hospital to take care of these cases. It was found necessary on account of the number of cases that developed in the Central School and Collegiate to vaccinate the pupils of both schools. The Provincial Public Health Nurses, Miss Burns and Miss Riddle, assisted very materially in carrying out this work and also in checking up any new cases that developed.

Of the five cases of typhoid, four of these were in a double house where well water was being used. The well was condemned after an analysis of the water was made at the laboratories of the Provincial Board of Health at London. The use of the water was ordered to be discontinued after the first case developed.

The total number of deaths during the year was 104, and the total number of births 136, of which ten were still-born.

Inspection of the source of supply of the water for use in our town system was made and samples of the town water were taken at intervals and forwarded to the Provincial Laboratories at London for analysis. The reports of these analyses showed that at no time was the water found to contain impurities sufficient to be at all dangerous to Public Health.

Inspection of the dairies and of the farms supplying milk for the town was made. Samples of milk from each dairy were taken at intervals and tested for cleanliness and for butter fat. This has resulted in an improvement in our milk supply.

Our meat shops are well kept and supplied with meat chiefly from regular abattoirs.

The slaughter houses have been inspected and on those buildings and surroundings which were below the requirements, improvements have been ordered.

Our Public Health Nurse, Miss Reid, is to be commended for the good work she is doing. This work has been greatly assisted by our Local Council of Women, an organization that is deserving of great praise for the excellent work they have done.

Yours truly,

(sgd) J. D. McDonald, *M.O.H.*

KINGSTON

Nov. 3rd., 1921.

To the Chairman and Members of the Local Board of Health, Kingston.

Gentlemen:—

I beg leave to submit the following report for the year 1921:

I had occasion to state in last year's report that the incidence of infectious disease was high. The same is true of conditions this year, both locally and generally, for the monthly reports in the Public Health Journal show that throughout the whole Province infectious diseases have been very prevalent. In the early months of the year diphtheria was most frequent in occurrence. For the past few months scarlet fever, at least in reported cases, heads the list. Smallpox gradually died out in the first half of the year. There were sixteen cases in Dec. 1920. The last case was in June, 1921. There have been only a few scattered cases of measles, and chickenpox but as a reminder that our water supply is not absolutely disease proof, we have had six cases of typhoid contracted within the City. This is immeasurably better than conditions of ten years ago, and yet it is higher than the uncontrollable minimum. Even the relatively good results we have are entirely due to chlorination of the water supply. If chlorination was stopped for twenty-four hours there would be many cases of intestinal infection. An intake pipe running out through a bed of sewage and subject to constant slight leakage will always be a menace to the community.

Among the cases of diphtheria reported have been a number of particularly virulent type ending fatally. Scarlet fever on the other hand while always dangerous has been of a more benign type in the majority of cases, and there is no doubt that the continuance of the disease is due to the fact that many of these milder cases are overlooked by parents, never seen by a physician, and wander freely among their fellows spreading this disease.

I reported last year that a clinic for the treatment of venereal diseases had been arranged for at the General Hospital, the arrangements for its establishment had been agreed to after conferences between representatives of the Provincial Board of Health, the Local Board of Health, and the Staff of the General Hospital. It was pointed out by the Local Representatives at the time of these conferences that a clinic in connection with the General Hospital would not require exactly the same personnel and management as a separate clinic under a Local Board of Health, and as the Kingston Board was not willing to undertake the establishment and management of such a clinic, the General Hospital Staff was with the approval of the District Health Officer, requested to assume these responsibilities, it being understood that the usual grants arranged for in the Provincial scheme would be paid over to the Hospital. The clinic was inspected by the Provincial authorities when ready to take cases, was pronounced satisfactory, and began the work of caring for these types of cases in Kingston and the surrounding district. Some fifteen hundred cases were cared for last year, but owing to the fact that the Hospital authorities considered the work of a Social Service Nurse superfluous in connection with the clinic, the Government grant was withheld. I have since been informed by Dr. Ross, Superintendent of the Hospital, that on account of this attitude on the part of the Provincial Board he has closed the clinic, and will treat no more patients. It is to be regretted that some way cannot be found to overcome this difficulty. The clinic was well under way, was doing excellent work, and its value was becoming more widely recognized in the District as the months went by.

The conferences of a year ago between the Local Board of Health and the Milk Producers, looking forward to the establishment of a central plant for pasteurizing and distributing milk came to an end without any action being taken, but were a value to all parties concerned in the exchange of views, and increased knowledge through this exchange. Partly as a result of these conferences it was agreed that bacteriological examination of milk samples should be made at the Provincial Laboratory under direction of Prof. James Millar, as it was felt that this would be a more effective means of determining the quality of milk delivered to the householder. Prof. Miller's report has been forwarded, and on the whole the quality of the milk supplied has been good, some samples showing a higher standard during the hot weather of July last than is required for certified milk.

As mentioned in my last report little can be done in the matter of housing conditions until labour and material have become more stabilized. There are many places serving as residences that should be closed up, but until house building can again show a profit for the intending investor it is impossible to think of destroying any of the accommodation we have, inadequate though it may be.

All of which is respectfully submitted.

A. R. WILLIAMSON.
Medical Officer of Health.

KITCHENER

KITCHENER, November 29th, 1921.

The Mayor, Chairman and Members, Local Board of Health, Kitchener, Ont.

Gentlemen:

I beg to present the Medical Health Officer's report for 1921.

There were 277 deaths recorded during the year and of this number 36 were premature or still-born children.

There were 585 births recorded.

There were 18 deaths from cancer, 10 deaths from tuberculosis, 6 less than last year. 1 case of typhoid fever was reported. There were a number of cases of smallpox during the first half of the year, but only two families have been quarantined since July 1st. There were 2 deaths from scarlet fever, but while the number of cases has been greater than last year the great majority of them have been of a mild type.

There were 10 deaths from diphtheria. Parents have been warned to call in a physician early in cases of sore throat. The disease is at present well under control.

There were 2 deaths attributed to measles and 4 deaths attributed to whooping cough.

The milk supply has been on the whole good and up to the required standard.

The water supply is good. I understand that when the Strange Street extensions are completed Kitchener will have ample artesian well water for years to come with sufficient storage to tide over the dry spells.

The Baby Clinic, organized in June by the Provincial Board of Health, is proving a success. The Clinic was carried on by the Provincial Board during June and July and taken over by the Local Board in August and a regular nurse installed. The attendance has been very satisfactory, each week a number of new patients have been added to the list. The physicians of the City have been faithful in their attendance, and the Library Board has kindly granted the use of one of its rooms.

Respectfully submitted,
JOHN MCGILLAWEE,
M.O.H.

LONDON

Dr. John W. S. McCullough, Chief Officer of Health, Toronto, Ontario.

DEAR DOCTOR:—

Dec. 9, 1921.

Annual Report of M.O.H., 1922.

I am very glad to begin this report by saying that we had practically no influenza, with pneumonia, in the city during 1921. The two previous years we had a goodly number of such cases in the city, and a number of these cases had to be taken care of by the local board as the hospitals soon became filled to capacity. These conditions provided a good deal of work and worry for the board.

The following cases were reported for the twelve months, ending November 30, 1921:—

Diphtheria	244
Scarlet fever	176
Smallpox	47
Tuberculosis	82
Typhoid fever	91
Venereal Disease	158
Chickenpox	267
Measles	500
Whooping cough	85
Mumps	57
Cerebro Spinal Meningitis	1
Impetigo	310
Scabies	242
Ringworm	42
Pink Eyes	43
Total	2345

Each case requires at least two calls; one to quarantine or indicate the patient and one to release patient. In some cases, such as diphtheria and where there is more than one patient in a house, we have to make several calls at one home.

The number of cases of diphtheria is greater this year than last. There were more cases than usual during the summer and autumn. The mortality is lower this year but still too high. This condition is due to carelessness of parents in neglecting to call a physician early in the disease in which cases antitoxin would have been given earlier and many of these lives would be saved.

There is a considerable increase in the number of cases of scarlet fever. This may be accounted for by the fact that more or less of an epidemic of this disease passed over Western Ontario early last winter. Our scarlet fever ward was crowded for several weeks and many cases had to be treated at home that otherwise would have gone into the scarlet fever ward.

There were about three times as many cases of smallpox during 1921 as there were in 1920. I personally examined each case and secured as good a history as possible. The histories showed that a good many of the cases were contracted outside of the city, but developed here after the usual incubation period. During the past two years I have seen more severe cases than in previous years. A few of the cases last year were semiconfluent. A number of cases had from 100 to 150 pustules on the palm of each hand. It maybe that the disease is tending to become more severe.

There were more than twice as many cases of chickenpox in 1921 than there were in 1920; most of the cases occurred during the winter and early spring. I made it a practice to examine every case thoroughly and to get a history of the case. By these methods I discovered five cases of smallpox that had been diagnosed as chickenpox. These were promptly quarantined and contacts vaccinated thus preventing what might have been epidemics of uncertain dimensions.

The percentage of increase in typhoid fever is greater than in any other disease. Nearly all of these cases occurred at the Ontario Hospital in which institution an epidemic occurred following the flooded conditions of city and surrounding country during the very heavy rains of July 3rd. The private water supply of the Ontario Hospital became contaminated and many patients and employees contracted the disease at the institution.

There was a great increase in the number of cases of measles. This disease is more difficult to control than any of the others due to the long incubation period and to the fact that there are always hidden cases that are not reported either from fear of quarantine or because the disease is thought lightly of by the public. It is more communicable than any other disease.

There is an increase in the number of cases of venereal disease reported. This does not indicate that the disease is on the increase. It means that the public have been aroused to the seriousness of the disease through publicity and a larger percentage of cases are being treated than formerly. In this connection a splendid work is being done by the venereal disease clinic under Dr. Gunn with Miss McVicar as assisting nurse.

All public and separate schools were inspected as to sanitation and ventilation. Recommendations and suggestions were made when thought necessary. There is an improvement on the conditions existing a year previous. Detailed reports on each school are attached.

During the year sanitary inspections of dairies, herds, and utensils was carried out vigorously by Dr. C. S. Tamlin. Some dairies were forbidden to sell milk in the city on account of unsanitary conditions and several were prosecuted in police court for violations of the milk by-law and for maintaining unsanitary conditions. Results are seen in samples of milk examined later in the season. A large number of these samples could be classified as certified milk.

Mr. R. H. Sanders and Mr. H. Boss have been very energetic and thorough in their inspections of restaurants, bakeshops, fish shops, butcher shops, laundries, barber shops, unsanitary toilets, dirty yards, etc., with the result that these places are now in very good condition.

We are now working under a good plumbing by-law which is being enforced by Mr. Jas. C. Young. Matters in this department are working out well under Mr. Young and very few complaints are heard.

During the year we frequently had to take cases to police court in order to enforce the Public Health Act. These cases included people with communicable disease who had to be forced to obey proper restrictions, and preventive measures in cases where is was impossible otherwise to get unsanitary conditions removed.

Mrs. Patterson as infectious disease nurse and Miss McGugan as nurse for the department of tuberculosis are faithfully carrying out their duties. The Board of Health is fortunate in having secured their services.

The M.O.H. has always found Chairman Dr. O. I. Cunningham, J. H. Saunders, Alderman Drake and Secretary S. Baker ready and anxious to assist him at all times. He has often called on them for suggestions and advice and they have never failed to give freely of their time and ability.

Your obedient servant,

W. S. Downham,

Medical Officer of Health.

Chairman and Members, Board of Health.

Gentlemen:

I beg to submit my report as Secretary of the Board of Health for the year 1921.

Meetings.

The Board of Health held thirteen meetings and the attendance of the members was as follows:

J. H. Saunders	13
O. I. Cunningham and Dr. Downham	11 each
G. B. Drake	3
His Worship Mayor Little	1

Plumbing By-law.

Mr. F. A. Dallyn, of the Provincial Board of Health, attended a Board of Health meeting in February and discussed the proposed plumbing by-law generally. The suggestion of Mr. Dallyn that the by-law be amended so as to comply with the requirements of the Provincial Board was adopted, and the by-law received the approval of the Council. It was decided to discontinue the license fees for plumbers. The Inspector of Plumbing reports monthly to the Board on the plumbing conditions of the city.

Restaurants.

The City Solicitor advised that the Council had no power to pass a restaurant by-law. The Board adopted regulations governing restaurants and these have been put into force. The Inspector reports a very great improvement in city restaurants

Sewers.

The Board received petitions respecting sanitary sewers from Delaware Street, Glasgow Street and Regine Street. The Board approved of the construction of these sewers on sanitary grounds and the facts were reported to the Council. By-laws were subsequently passed.

Milk By-law.

A number of important amendments have been made to the milk by-law and the Board is now considering the question of having all herds inspected and certified by the Dominion Board.

Clean Up Week.

The Board appointed no house to house inspectors but continued the work of last year, approving of the work of the Boy's Council of the Y.M.C.A. The campaign put on by the young men was productive of keener interest and more satisfactory work.

Having these matters under the Sanitary Inspectors has proved much better than the old method of temporary inspectors.

Miss Barons' Resignation.

Miss Barons, Tuberculosis Nurse for the city, resigned on her marriage. Miss Barons' work was of an exceedingly high order and her services were very much appreciated by the Board.

Complaints.

Very many complaints were satisfactorily dealt with by the Inspector. The question of the condition of private lanes was brought to the attention of the Board and dealt with successfully through the Inspectors.

Thorne's Cleaning Works on York Street was vigorously complained of to the Board by a number of ratepayers adjacent thereto. Again the Sanitary Inspectors have been successful in securing an amelioration.

The conditions in the East End respecting the slaughter house have proved more difficult, but there has been an abatement of the nuisance.

The Orchard Street drain also was up before the Board and, with the assistance of the Engineer, materially improved.

Hyman's Tannery was found in a fair condition.

H. Boss Appointment.

R. H. Saunders, who took the place of James Lutman, superannuated, has rendered splendid service. The appointment of Mr. Boss as Assistant Sanitary Inspector has enabled the Board to have the sanitary inspections of the city done more satisfactorily than at any time in its history.

Western Fair Grounds.

The Board felt it to be its duty to call the attention of the Western Fair Board to the need of improving the sanitary conditions for Fair time. With the co-operation of the Fair Board, this difficulty will be lessened.

Reports.

The reports of the Sanitary Inspector, as printed in the minutes monthly, show that 4,263 visits have been made by the sanitary inspectors.

116 tests of water suppply were made by Dr. Slack of the Hygienic Institute and, in most cases, the water was shown to be of good quality.

Dr. Tamlin made 399 inspections of herds during the year.

The milk examinations, totalling 556, show that the milk supply of London is of excellent quality and remarkably clean.

Dr. Downham's report on contagious diseases, submitted at each meeting, will give the standing and the number of cases.

Mrs. Patterson, the Public Health Nurse, made upwards of 1,340 visits.

Miss McGugan's report shows the number of cases of tuberculosis.

Miss McVicar's report shows 485 patients treated for venereal diseases.

The Plumbing Inspector reports 790 inspections of plumbing, 474 permits issued, $1,295.20 fees collected, 390 water tests made and 183 smoke tests.

All of which is respectfully submitted.

S. Baker.
Secretary.

The Chairman's Annual Report.

O. I. CUNNINGHAM:—

We are realizing to-day as never before the need for constructive development. We have protective tariffs to protect out industries, a navy to protect our shores, a merchant marine to protect our trade, great irrigation projects to reclaim waste lands. We have a thousand ways to build up our national wealth and prosperity, but what of health? What are we doing to conserve our health?

The answer must be self-convicting. As a nation, a community or as an individual we are guilty of no greater crime than the widespread neglect of health conservation. Modern mothers would be horrified if their religions demanded that each year a certain number of children be sacrificed to heathen gods; but equally violent death is being met by just this many children, who through carelessness or ignorance meet untimely death each year. We may call this sacrifice. The foregoing is not a criticism of our health department, for with the meagre money at its command we are doing over 100% efficiency. But I would be recreant of my duty if I did not call your attention to the greater possibilities for service to humanity which this department could and would do if only given the opportunity. Because our city is doing more than the average of the country over, it is not enough; with the excellent facilities which we have here we should be in the very front.

It is not to be expected that the members of the City Council or boards of estimates will be conversant with modern health practices; and it is therefore the duty of this board to formulate some plan which will bring to their attention in a more forceful and understandable manner the real importance of health protective measures. We should not have a repetition of last year when the board of estimates cut the health department's allowance without even consulting the department, especially as we now receive less than 25c. per capita for health measures. At the same time they increased the fire department by more than the total of the health department. The ratio is now nine times as much for to protect your personal property from fire, as to protect your health. Only through a plan of education can this be put on a proper basis.

I would like to see a more efficient system in the department not only in statistics, but in valuating the relative importance of the various functions of the department, not of its assets, but of its activities, and therefore try to place a definite value on the various phases of the work. The department could eliminate many unnecessary or illogical duties; and would also have the effect of placing more emphasis on those activities which are likely to produce the greatest results.

Unfortunately to the legitimate activities of a health department are often added duties which, in the light of present knowledge have little or nothing to do with preventing sickness or decreasing mortality. It should be quite obvious that where the money at the command of the department is very limited, that that money should be used where and in such manner as will give the best results in the saving of lives and preventing sickness.

Some of this may be considered idealistic, but the health department will never reach its real place until it is able to put a proper value on its activities, and then concentrate on the most important. It will then be found that tuberculosis, the milk supply, the direct control of communicable diseases, infant mortality, the visiting nurse, home isolation, vital statistics, etc. are vastly more important than detecting bad odours, inspecting yards and dumps, plumbing installation, and many other petty nuisances, many of which could and should be turned over to other civic bodies, such as the police and garbage departments.

In receiving the reports of the different officers of the department, one's attention is called to the very thorough and efficient work that each is doing. As your chairman this year, I have endeavoured to give each officer as much latitude as possible in working out their ideas, and when needed, backing up. The excellency of the reports bears out the wisdom of the method. Most noticeable perhaps is the milk supply, which has been gradually improving, until the last report is the best ever turned in by any city, and I wish to compliment Dr. Tamlin on his excellent work.

The work of the sanitary inspectors has been more than satisfactory, always willing, efficient and courteous, they have secured the desired results, seldom having to resort to coercion or the courts, but where such was necessary, the case was tried and a conviction secured. The results are very gratifying. The hotels, restaurants, butcher shops, and all places where food or food supplies are handled are now being kept up to a high standard.

Considering the general apathy toward the health department, which is directly reflected in the small allowance given for its maintenance, Dr. Downham is to be congratulated on the results obtained. In his special department, that of contagious diseases, with one or two exceptions the city has been very free. Typhoid and smallpox have been at a minimum, but measles and chickenpox have been altogether too prevalent. This condition should not be laid at the door of the health department, but rather with the citizens directly, who take these matters altogether too lightly, and until the department is in a position to put over an educational campaign, these conditions will continue to exist. The nurses in this department have worked arduously and efficiently. While their work is not as spectacular as some other branches, it is nevertheless about the most important, and the department would be better served by adding another nurse, especially in the tuberculosis division.

The maintaining of the venereal clinic shows real and valuable progress, and is a branch of the work which should be encouraged and helped to the utmost.

The putting into operation of the revised plumbing by-law is a source of gratification; it is operating smoothly and the people are assured of satisfactory plumbing at a much reduced cost to what it might have been.

Special mention should be made of the Public Utilities board for the purity of the City water supply, and for their ready willingness to always keep it so. A pure water supply is a great help to a health department.

And now a word to the officers of the department. To you the members of the health board, appointed by the Council must look for the technical knowledge, and suggestions for improvement and advances. The growth and efficiency of the department will be in direct ratio to the interest and enthusiasm which you put into your work. I would like to see the department carry on its efforts for tuberculosis herds, and for clean work, also for the proper bottling of milk; to formulate and carry out an aducational campaign to the people and the City Council, and to try to obtain in conjunction with the Institute of Public Health a statistician.

The great strides that have been made in preventive medicine have advanced faster than the peoples' knowledge in those matters, and until the people can catch up, as it were, with these new conditions, the passing of rules and regulations is almost useless.

In conclusion I wish to thank the members of the Board and the officers of the Department for the help you so courteously and willingly gave me. All of my associations in connection with the Department of Health have been of the most pleasant ,and i,f one thought is more uppermost in my mind than another, at this parting hour, it is that we should so shape our endeavours, that the Department of Health may have a future growth commensurate with its importance——for

As we have plucked the fruit of others' planting let us in thoughtfulness plant for others yet to be.

NEW LISKEARD.

I beg to submit the Annual Report of the Board of Health for the year ending November 30th, 1921.

VITAL STATISTICS.

The number of births registered for the year was seventy-two, an increase of five over last year. The number of deaths reported was twenty-seven, a decrease of five from last year.

Causes of deaths given as follows:—

Still-born	1
Angina Pectoris	1
Congenital weakness	2
Cardio-renal Toxæmia	2
Old Age and Pleurisy	1
Pneumonia	3
Premature Birth	4
Chronic Cholecystitis	1
Endocarditis	5
Malnutrition	1
Gastro Intestinal Catarrh and Jaundice	1
Accidental Drowning	2
Anamoly of Heart	1
Obstruction of bowels	2
	27

We are pleased to report that within the year there are no deaths from tuberculosis registered. Our town has always been particularly fortunate in this regard.

CONTAGIOUS DISEASES.

Scarlet Fever:—Five cases were reported early in the year. These were of a mild type, in fact had it not been that there was already one case in the house the other two would not have been recognized. They were promptly quarantined and the disease did not spread further. Prompt notification and quarantine of scarlet fever is the best method of preventing an epidemic.

Tuberculosis:—Three cases have been reported. This is an increase over last year when one was reported which came from another part of the country. Early diagnosis and proper care of themselves by patients suffering from this disease is doing more every year to keep down the death rate.

Smallpox:—There have been several cases in town during the year. We were unable to trace the origin of the infection. Many originated in town but there were also some from outside. The disease in most cases was of an exceptionally mild type and was therefore hard to differentiate from chicken-pox. No deaths resulted from this disease and it is now stamped out in town, no cases having been reported for two months.

Measles:—There have been no cases reported.

Diphtheria:—No cases.

Typhoid Fever:—There have been no cases reported during the year. This is much more satisfactory than last year when eight cases were reported. During the months of August and September there was an epidemic of dysentery of a severe type. We believe that this was prevalent in a large part of the province but, so far as our municipality was concerned, we were unable to discover any cause for it. No deaths were reported. Notwithstanding the exceptionally hot weather during June and July there was very little summer complaint among infants. This speaks well for our water and milk supply.

WATER SUPPLY. ..

This has been kept up to the usual high standard. In accordance with instructions from your Board the water has been limited, so far as possible to that from the wells. It is only at times when the wells are unable to provide sufficient water that water from the springs has been used. Inspection of the pipe leading from the springs was carried out during the low water and several leaks, admitting lake water, were discovered. These were repaired. This work added materially to the safety of our emergency supply of drinking water. Your board would advise the citizens generally that the presence of air in the water, as seen occasionally, is in no way detrimental to its quality as this air is put there by the pump when there is not enough water to keep it going to capacity.

The milk supply has been kept up to a good standard throughout the year. While the dairies are small and have not all the equipment that larger dairies can maintain, the quality of milk supplied has been good. Very good evidence of this is found in the small number of cases of infant diarrhoea occuring during the hot weather.

The sanitary conditions in town have shown improvement as has been the case each year since our present scavenger has been on the work. Your Board would draw the attention of the public to the fact that dead animals may be taken to the dump only after the owner has received permission and, when so taken, must be destroyed. In other cases, where the scavenger takes them, he is responsible for this work.

In conclusion I wish to thank the other members of the Board and the Sanitary Inspector for their co-operation and assistance during the year.

All of which is respectfully submitted.

J. S. McCULLOUGH, M.A. B.A.,
Medical Officer of Health.

NIAGARA FALLS

NIAGARA FALLS, CANADA, DEC. 21ST, 1921.

The Chairman and Members of the Local Board of Health.

GENTLEMEN.—I beg leave to submit my report for the year ending Nov. 30 1921.

In the present year there were in the City of Niagara Falls four hundred and seventeen births including twenty-three still born. and for the same period one hundred and eighty deaths.

We have had no epidemics of any kind except in the autumn a large number of cases of chickenpox, the cases proving very mild.

Three cases of smallpox appeared in November and December, one was more or less serious, the other two mild. The mild cases had been vaccinated while young.

Our two school nurses have been doing excellent work among the schools, and house visiting. It was through them that we located most of our chickenpox.

Our city nurse Miss Forbes is doing good work in the city, looking after the mothers, and children of pre-school age, having a clinic each week with a doctor in attendance.

The city is undertaking to build a large trunk sewer along Muddy Run Creek approved by the Provincial Board of Health. This will cost about $350,000 and will be a great benefit to the city at large, and the outlying districts. The work is continuing through the winter which no doubt will benefit and help the unemployed.

Our milk supply is adequate and is well up in butter fat. Our inspector is very efficient, and tests the milk thoroughly and repeatedly.

The water supply has proven fairly free from Coli, samples are analyzed each week, and reports issued. The chlorine at the present time is about eight parts in a million, although in September we had 16 parts to the million for a short time.

A new school has been built at a cost of $110.000, which will take care of the oversupply for some time. This gives us six large schools with about forty teachers.

I would strongly recommend an Isolation Hospital. We are a border town, and a town which has an influx of visitors every month in the year from every country on the Continent. This Hospital should be built.

Our new General Hospital built this year is a credit to the city. It has increased the accommodation for the sick four fold.

All of which is respectfully submitted,

H. LOGAN,
M.O.H.

NORTH BAY.

To the Mayor and Council,
North Bay, Ont.

Gentlemen:—

I beg leave to submit my seventh annual report as Medical Officer of Health of this Municipality.

1. Vital Statistics

Estimated population		11,402		
1920		10,924	Increase	478
Births, Males	237	1920		
Births, Females	180			
Total	417	424	Decrease	7
Marriages	121	129	"	8
Deaths	137	189	"	52

Deaths were due to the following diseases:—

Still-born and accidents of pregnancy	39
Broncho-Pneumonia	14
Heart Disease	14
Diseases of Digestive Tract	8
Appendicitis	3
Paralysis	4
Erysipelas	1
Tuberculosis	1
Meningitis	3
Cancer	1
Typhoid Fever	2
Brights Disease	
Diabetes	1
Accidents	6
Diphtheria	3
Scarlet Fever	2
Croup	3
Various causes	29
Pleurisy	1

2. Communicable Diseases

Diphtheria	77 cases,	3 deaths.
Smallpox	56 "	0 "
Scarlet Fever	35 "	2 "
Typhoid Fever	8 "	2 "
Chicken-Pox	7 "	0 "
Tuberculosis	4 "	1 "

It will be observed that the increase in popuation according to the assessment is 478 over that of 1920. The deaths of 137 are 52 less than in the previous year, leaving a surplus of Births over Deaths in the year, of 341. Taking this natural increase away from the total increase, we find that 137 people have taken up their residence in the town for some reason or other, this, not taking into account the removals which are more than taken care of by the increase.

In analysing the deaths, we find a very noticeable decrease of 56 over that of 1920. This is largely due to a decrease of 13 on account of still births and accidents of pregnancy and 10 less deaths due to Pneumonia and to the fact that in 1920 there were 22 deaths due to Influenza and none in the current year. There were 7 deaths due to Communicable disease in 1921 as against 35 in 1920, so that the Municipality, from this factor, has been freer than in other years.

DIPHTHERIA

There has been more of this disease prevalent during the last year than in 1920, 77 cases as against 44. These cases have occurred mostly during the school terms, when contact was mostly carried out. There were 3 deaths in spite of the fact that Anti-Toxin is supplied free by the Provincial Board of Health. Two of these deaths were due to late administration of the remedy and the third from a mixed infection causing Septicemia after the throat was free of membrane. It must be said that the parents were the responsible parties in calling their physicians in too late in two cases, the third being in an adult whom I saw in consultation.

SMALL-POX

There were 56 cases reported and quarantined. Some six cases came from without the Municipality and were housed at our Isolation Hospital. Fees were collected from these by our Inspector, Mr. Tandy, as far as possible. A good many coming from lumber camps, we collected from the lumber firms concerned. There were no deaths from this disease and we are surprised that people do not avail themselves of vaccination and so save themselves from the disease with the serious loss of time and inconvenience involved.

SCARLET FEVER

We have had 35 cases of this disease, as against 24 in 1920. These occurred throughout the year, but in no epidemic form, and 2 deaths resulted. Most of these cases were of a mild character fortunately, and we found a great deal of objection to the long quarantine of six weeks imposed by the Provincial regulations. The disease is communicable, however, for five weeks, and so to protect others the long period is required.

TYPHOID FEVER

There were 8 cases of this disease with 2 deaths. One of these cases occurred in an Italian and was a very severe and malignant type and though removed to the Hospital from a shack on Front St., he lived only two days, dying with a temperature reaching 107°. We could not ascertain the source of this infection. The other case, we feel sure, was traceable to bathing in the lake in too close proximity to the discharge pipe of the East End Septic Tank. Apart from some cases from out of town and treated in our Hospital, I believe bathing in Lake Nipissing is responsible for most of the cases that occur here and not from food or water.

TUBERCULOSIS

Four cases were reported with one death. One case was sent to the Weston Sanitarium and returned much improved in health, and is still under observation but with no cough or sputum. The other two cases are living, but in poor condition and ultimate outlook not good.

VENEREAL DISEASES.

Under the V.D. Act, these cases are now reportable by serial number of the physicians. Several (7) cases each of Syphilis and Gonorrhoea were reported to me and if the statistics collected by well known authorities are true, this is a very small percentage being reported. In some cities 15% of the population is reported infected with Syphilis. An investigation made a few years ago in the wards of the Toronto General Hospital disclosed 12% to be infected and the large percentage unaware of its presence. Osler calls this disease the "Killer of the Race" and Gonorrhoea the "Sterilizer." It was feared the soldiers on returning would be a menace to the civilian population but on investigation, it was found to be the reverse and the disease much more prevalent among the people.

Dairies and Milk Supply.

The Laboratory has further assisted us this year in testing our milk supply. The butter fat content has been up to requirement of the Milk By-law. The bacterial count carried out in September disclosed a very high count, some samples, notably three samples from Powassan, growing over a million to a million and a half germs from sixteen drops of milk in 24 hours. This shows that milk held over 24 to 48 hours is not nearly as safe as that produced nearer town and brought in by the farmers direct to the local vendors. These latter showed about 60% less bacteria. The pasteurization of the milk is carried out during the summer heat by two dairies and yearly by one. We are of the opinion that the Milk By-law should be amended to compel all milk sold within the Municipality to be pasteurized. In this way, we can be sure that our children will be protected against communicable disease and tuberculosis. Licenses were granted to the following:—

Mrs. John Perry, Ferris township	No. 99
T. K. Purdon, Powassan, Ontario	" 100
W. F. Clark, Powassan, Ontario	" 101
A. McLeod, Widdifield, Ontario	" 102
W. Ostrum, Ferris	" 103
W. F. Dreany, Widdifield, Ontario	" 104
Mrs. S. Simms, North Bay, Ontario	" 105
Mrs. Geo. Souter, Widdifield, Ontario	" 106
Mrs. R. Leach, Widdifield, Ontario	" 107
H. Picard, North Bay, Ontario	" 108
Chas. Johnston, North Bay, Ontario	" 109
Geo. C. Smyth, North Bay, Ontario	" 110
Jas. Passmore, Ferris, Ontario	" 111

Public Health Nursing and Child Welfare Work.

The estimate to cover a salary for a Public Health Nurse was not passed by the Council notwithstanding the recommendation of the Board of Health. We believe this work in Ontario has demonstrated its worth and place and this town must follow suit, sooner or later. For the last few months, Miss Hally, Public Health Nurse from the Provincial Board of Health, has been conducting an investigation into the matter and her report will be before you shortly. In addition, Dr. W. J. Bell, of the Provincial Board of Health is now in our town conducting a Child Welfare Clinic and Demonstration of this project. The Medical Profession of the town are endorsing and supporting the movement and in due time a further request to cover appropriation for salary for a Public Health Nurse will be repeated. The importance of conserving to the town and State the lives of our children cannot be overestimated. In too many homes innocents are neglected ignorantly and, in some cases wilfully. In the well-to-do, the defects of the children are often ignored and it is the duty of the Public Health

Nurse to remind our citizens and parents of these defects, to call their attention to undernourishment and to assist the mothers in intelligently feeding them, as well as to advise them in their Pre-Natal care. We feel that our Municipalities should not hesitate to spend money to safeguard the child, to assist him to adult life under favourable conditions as well as to provide for streets, sidewalks and other proper expenditures.

Water.

The Town's water supply has been very thoroughly analysed this year at our Laboratory. Dr. Douglas very kindly undertakes to run through specimens daily, except Sunday. These samples disclosed a condition experienced in previous years that of the presence of intestinal bacteria in large numbers. The last report of the 5th. inst., showing as high a count as 40 in 16 drops of water, which undoubtedly shows contamination. Despite these Laboratory findings we have had no Typhoid Epidemic in town and we are of the opinion that the contamination is not of human origin, but of animal from which source we have little to fear. There is, however, always a possiblity that a Typhoid carrier may infect the water and so endanger this splendid water supply. We have endeavoured to safeguard this as much as possible and we are still of the opinion that sanitary control over its watershed should be given to this Corporation. In a measure, this is now possible through an amendment to the Public Utilities Act and which we shall be able to use at future times if it be necessary. The installation of a Chlorination Plant would safeguard our people still further and, in our opinion, should be installed for emergency use.

SEWERS AND NIGHT SOIL AND GARBAGE REMOVAL.

The building of sewers on Ann St., Morin St., etc., were duly approved and built during the year. The urgent need of further extensions to the Sewage System is apparent when one considers the fact that there are now in operation some 1,200 outside closets. These should be gradually reduced, and great reduction could be effected by converting the present storm sewer which runs from the corner of High St., and O'Brien street to where it empties into Chippewa at the corner of Regina and Second Ave., into a sanitary sewer. This would be a great advance. At present there are probably 50 or 60 houses now using this as a sanitary sewer, which is quite illegal and very dangerous. We find, also that there are 128 outhouses being used, which have sewers in the streets so located. Some of these are on rocky lots and expense is a big item in preventing use of the sewers. Some municipal scheme should be devised to overcome these difficulties. Mr. Tandy reported to me in August that the night soil is being removed satisfactorily by Mr. Roche and that the area at Trout Mills has received even better attention than is required by the agreement with the Township of Widdifield and that this source of contamination to our water supply is being guarded and prevented as far as possible.

LOCAL BRANCH LABORATORY.

Earlier in the year, the Branch Laboratory of the Provincial Board of Health got under way under the directorship of Dr. J. S. Douglas and his assistant Mr. Lawson. Close to 2000 specimens have been handled here during its short existence and has proved its very excellent and valuable service to the community. Despite the cost to the Town, we believe this money is well spent and is a distinct addition to the health of our citizens and conservation of life. The increased pay-roll to the town is a respectable sum alone, besides the expenditure normally attached to such an institution. We believe this institution will expand and in time the present buildings will be added to. The Medical Profession of the town have received the greatest courtesy, co-operation and help from Dr. Douglas, and his staff and equipment have always been at our disposal to assist in any way possible. The Department has kept on hand abundant supplies of free antitoxin and other vaccines, which were available for all emergencies and situations.

Conclusion.

I have received able support from my Inspector, Mr. Tandy and his own personal report speaks for itself. The District Medical Office, Dr. George and the Provincial Sanitary Inspector, A. R. White and his staff have been always available for consultation and assistance. The Council and Board of Health have also co-operated willingly. I beg leave to extend my appreciation and thanks to all.

All of which is respectfully submitted.

(Sgd.) EDGAR BRANDON, *M.O.H.*

NORTH BAY.

NORTH BAY, DECEMBER 13TH., 1921.

(*Report of Sanitary Inspector, for 1921.*)

The Mayor and Council, North Bay, Ontario.

GENTLEMEN:—

I have much pleasure in submitting the following report of work done in this Department during the year 1921:—

The following gentlement constituted the Board of Health— L. W. Wilson, Chairman, T. M. Bourke, W. D. Parks, Mayor Ferguson (ex-office) and Dr. E. Brandon, M.O.H. The Board has met on five occasions, and dealt with the matters arising and usual routine work in an expeditious and satisfactory manner.

SEWERS.

The section of Sewer on McIntyre St. to Ferguson St., was finished in the early part of the year, and several property owners have had Sanitary appliances installed and connected up to this Sewer. Applications for new Sewers on McPhail, Morin, Cedar and Ann Sts., and Home Ave., were made and approved both by the Provincial and Local Boards of Health. These Sewers have been laid and will give relief to quite a number of properties, which were without any outlet for Sanitary fixtures. We will follow up this matter, and impress the property owners with the value of connecting up at the earliest possible moment in the Sanitary interests of the Town.

SEPTIC TANKS.

The Septic tank at the west end of the Town was cleaned out this spring, and is working fairly well, but as a matter of fact, the tanks appear to be inadequate for the amount of sewage to be treated effectually.

PLUMBING.

Applications for thirty-five plumbing permits have been received and granted. This is twelve in excess of last year, and represents an expenditure of approximately $20,000.00.

COMMUNICABLE DISEASES.

One hundred and eighty-three cases have been reported this year:—

Scarlet Fever	35
Diphtheria	77
Small Pox	56
Typhoid Fever	8
Chicken Pox	7

All these cases were quarantined and afterwards the houses were disinfected. The Isolation Hospital had to be opened up to take care of a few cases of Smallpox from camps, etc.

GARBAGE COLLECTION.

This was operated by the town till the end of April after which the collection was let out by contract to Mr. E. J. Roche under a By-law, and at a increased tariff. The contractor is making the usual collections and very few complaints have been received, so we must consider the work to be done in a satisfactory manner.

Night Soil Collection.

This work is operated by contract with Mr. E. J. Roche, at a cost to the town of $400.00 per month, as last year, and includes the collection of night-soil from Trout Lake. Mr. Roche is collecting from Trout Lake twice monthly, instead of service every three weeks as per agreement, which assists in keeping the surroundings at Trout Lake in a more sanitary condition. Complaint was made in the summer of the odor from dumping in the Sewer at Regina St. This was obviated by using the Septic Tank for several months. There are quite a number of outside closets in an unsanitary condition, owing to old age and other causes. These will have to be repaired or replaced before the summer months, and this matter will have attention, and we hope the co-operation of the public to get them in proper shape, without friction. We may say that Mr Roche is carrying out his contract to our satisfaction, and complaints are very few.

Water Supply.

Our water supply at Trout Lake has not been very satisfactory this year, and notice was served that it must be boiled before using for drinking purposes. It has been analyzed several times weekly during the year, and up to the present, is not nearly so good as last year. I have inspected the surroundings at Trout Lake, and cannot find any trace of leakage from closets, etc., which could reasonably get into the lake, so must come to the conclusion that the contamination is distributed in the lake from the creeks. I trust that the council of 1922 will support the Board of Health, and have an automatic Chlorination Plant installed, which will overcome the dangers of contamination and make the water safe for the public.

Dairies.

Inspection of dairies has been made in Widdifield, Ferris, Powassan and others sources of supply, which are twenty-two in number, and have been visited on several occasions this year, the Test Card system being adopted, and marks given for cleanliness, conditions of buildings, cattle and utensils, etc. The milk has been tested and test discs, etc. registered monthly, both by myself and on several occasions by the Laboratory, for germs, etc. During the warm weather, several samples showed an excessive quantity of bacteria. The samples all tested over the minimum of butter fat.

Market.

The market has been periodically visited and no flagrant breaking of our By-laws noticed. The fact that there is insufficient accommodation at present existing in our market building, has led to the offering of meat, etc., for sale in a rather primitive manner. This matter will have to be taken up by the authorities, as this state of things, with a growing market, cannot be tolerated.

To sum up the work in this Department, roughly, it would be as follows:—

Quarantine on houses	183
Disinfection of houses	183
Visiting patients, etc.,	300
Inspection of dairies, etc.,	75
Serving notices for abating nuisances	200
General inspection of closets, etc.	350
Milk samples taken	120
Taking care of Isolation Hospital and daily visits to same while occupied; Acting as Secretary to the Board of Health; General routine, office work, etc.	

In conclusion, my thanks are due to the members of the Board of Health, Dr. Brandon and Dr. George, District Officer of Health for the Province, and Provincial Officers A. White and J. Richardson, for their help at all times when requested.

Respectfully submitted,

ALFRED TANDY,
Sanitary Inspector.

ORILLIA.

To the Chairman and Members of the Orillia Board of Health.

Gentlemen,—

I have the honour to submit to you the report of the sanitary condition of the Town of Orillia for the year 1921. There have been reported during the year the following communicable diseases:

Smallpox	14 cases.
Poliomyelitis	9 "
Diphtheria	12 "
Scarlet Fever	1 "
Measles	3 "
Chickenpox	1 "
Whooping Cough	3 "
Typhoid Fever	2 "

Smallpox, which was prevalent for a year and a half, I am pleased to state, has entirely disappeared, not a case having been reported since the first week in July. Poliomyelitis, or infantile paralysis, existed to a far greater extent this year than ever before in the history of the town, there being only one case reported previously during my term of office. Dr. J. J. Fraser, District M.O.H., came to our assistance, but notwithstanding a careful investigation we were unable to locate its origin or decide how the victims caught the infection. It is regarded as communicable, and quarantine was strictly established both in town and township, where a number of cases occurred. Although a very dangerous disease only one death was caused by it. No fatal result followed any of the other contagious diseases.

You will observe that the town was practically free from typhoid, one case reported coming from outside, and the other was found in the outskirts where well water was used. This fact shows that filtration and chlorination has been well attended to by the Commission's engineer, Mr. Starr, and that the water supplied to the people of Orillia is free from contamination of every kind. But Lake Couchiching is in danger of pollution from three sources, viz. Mount Slaven and Tannery Creek, the Government ditch from the Moffat farm, and the boathouses on the Lake front. Next year's council should take the necessary steps to have this danger removed.

Milk tests were made at regular intervals during the year, and the percentage of butter fat was above that required by the by-law, and from the point of cleanliness the milk was fairly good. No complaints were made and I was unable to trace any sickness among children due to the use of milk. I think it would be wise to demand from every vendor of raw milk a certificate that the herd supplying the milk is free from disease, particularly tuberculosis. Chief Murphy and Sanitary Inspector Litster, on recent inspection, found the dairy stables in a satisfactory condition.

All the meat consumed in town comes from outside points, especially Toronto. In Toronto all animals before being slaughtered are subjected to a rigid inspection so that no diseased meat is sent out from that point. But there are a number of wholesale butchers in the surrounding country who sell their product in Orillia and no proper inspection has been made of the animals killed by them. I would suggest that some reliable evidence should be supplied by such traders as to the quality of their stock. I have no fault to find with the butchers doing business in town.

The Sewer System has been extended and many new connections made. There has not been so much trouble with the pumping station and the main pipe on Simcoe Avenue.

Many complaints of nuisances have been received during the year, such as overflowing cesspools, privies not attended to, piggeries, etc., but in each case the Sanitary Inspector has looked after the matter complained of.

During the extreme heat of last summer complaints were brought to me that bathers in the Lake were attacked by an irritation of the skin caused by something in the water, but upon investigation it was found that the trouble was due to the heat and not to the water. While the town has good facilities for bathing, both at Couchiching Beach and Kitchener Park, they were far from adequate to meet the demand during the months of July and August, and it would be a good idea for the incoming Parks Commissioner to be on the look-out for more accomodation for next season. In this connection a word in praise of Park Superintedent Whitton is not out of place, for to his untiring energy and good work is due in a large measure the excellence of Orillia's beautiful breathing spaces.

I have the honour to be, Gentlemen.

(Sgd.) John McLean, M.D.,
Medical Officer of Health.

OSHAWA

Oshawa, Ont.,
November 30, 1921.

Chairman and Members,
Local Board of Health.

SIRS:

It is my duty to lay before you the annual report, for the year 1921, of the work done by the Health Department.

"Money spent in the prevention of disease should be looked upon as insurance. Money spent for better health is returned to the community in terms of diminished disability, and decreased financial loss due to sickness."

ESTIMATED EXPENDITURE.

You will remember we placed an estimate before the Council of an expenditure of $7,000.00 for the year. It is now more than likely that we will complete the year to the first of January, 1922, within our estimate.

DEPARTMENTAL OFFICES.

About the middle of April, 1921, arrangements were made by means of which the offices of the Board of Health were removed from the Market Building to the new Municipal Building in the Pedlar Block, the future Central Public Park. Here, considerable room for expansion was provided, while at the same time all the officials of the Department were brought together in a suite of offices on the ground floor of the building, convenient of access to the public. and very suitable for our purposes. We have now an outer office for the Office Clerk and the two Public Health Nurses; a separate office for the Health Officer and the Sanitary Inspector; storage space for records, and equipment provided by the Red Cross; two cloak rooms, bathroom, supply room, a fine new refrigerator, obtained at a minimum cost through the kindness of Mr. W. R. Geikie, in which can be accommodated a full supply of all the serums and other supplies provided by the Provincial Board of Health for the prevention and care of Contagious Diseases. We have here, constantly on hand, stored under proper precautions, a readily available supply sufficient to meet any demand placed upon it by the doctors of Oshawa and the whole of the surrounding locality as far west as Whitby, as far north as Raglan, as far east as Bowmanville, and south to the Lake. From the use which has been made of these supplies, we know that in this provision we are meeting a long felt and important want.

ASSISTANT PUBLIC HEALTH NURSE.

On the first of September, 1921, we regretfully lost the services of the Assistant Public Health Nurse, Miss E. A. Gibbs. Her services had been of very great value to our work, particularly with the development of the Child Welfare Clinic for non-English speaking citizens, which was started in May, 1921, and has since been continued.

On October 1st, 1921, Miss D. Cross came on duty as Assistant Public Health Nurse, in the place of Miss Gibbs. Miss Cross was one of those nurses who had received special training in Public Health Nursing Service at the

University of Toronto, under the auspices of the Ontario Red Cross. The Local Board has been very fortunate in its selection of an Assistant Public Health Nurse. You will remember, the Assistant Public Health Nurse was provided by Mrs. F. W. Cowan out of her own private purse, because she had realized the necessity of the second nurse in the Department, and appreciated our inability to establish the nurse at that time. Now that a year of trial has been carried through, it will be necessary to make provision for the retention of Miss Cross on the permanent staff of this Department, paid by the Municipality. It will be absolutely impossible to get along with only one nurse. The work now occupies completely the time of both the nurses.

The approaching annexation of Cedardale, with its additional 1,200 population added to our own, will still further increase the duties of the Health Nurses.

From time to time I have commented on the unwisdom of carrying on our Public Health Nursing Service without any other means of transportation than walking.

Car for the Health Department.

Here again, the magnificent generosity of one who has repeatedly, in season and out of season, stood behind the Health Department in its work, has come to our assistance. I am at liberty to inform you that Mrs. F. W. Cowan has signified her intention to make a Christmas present to the Department, of an automobile to help out in the Health Work.

Red Cross.

Here is a fitting place for me to acknowledge the extremely great and continued assistance the Red Cross Local Branch is extending to us in our work. I am glad to say the Red Cross has a room on the second floor of the Municipal Building granted to it by the Municipal Council for its own use, and with which we are in intimate contact.

Permit me also to extend my personal thanks to all the officials of the Health Department for the services which they have given us this past year.

English-Speaking Child Welfare Clinic.

Miss Harris's Child Welfare Clinic, which was opened in June, 1920, in the Methodist Mission on Albert St., has steadily prospered, and is doing splendid work, as you will be able to see from her own report.

Epidemic Diseases.

During the past year, we have had none of the severe epidemics, such as we experienced in 1918, 1919, and 1920, of influenza, smallpox and diphtheria, nor have we found as much tendency as occurred in those years to outbreak of Communicable Diseases, grouped in certain specific areas of the town. The tendency has been rather to a more even, irregular, scattered appearance of the different diseases in all parts of the municipality.

Intestinal Diseases of Childhood.

This year has been marked by a great reduction in the number of reported cases of intestinal troubles with children. The Superintendent of the Oshawa

General Hospital has particularly commented on this fact. We have felt that the Child Welfare Clinics have been a great help in safeguarding against these troubles. It may also be that the intestinal diseases of childhood have not manifested the same severity this year as was exhibited in 1920. Whatever be the cause, we have reported this year only 18 deaths from intestinal diseases in children under 1 year while last year the number was 35.

COMMUNICABLE DISEASES.

TYPHOID FEVER.

Six cases of typhoid fever have been reported for the year. Four cases were known, definitely, to have received their infection outside of the Municipality. Of the two cases which arose in town, one contracted the infection from well water; the other from creek water. In no case, have we had any reason to suspect our local water supply, or milk supply.

DIPHTHERIA.

Diphtheria has been less prevalent this year, and has been better handled. The search for "Carriers," the quarantining of exposed individuals, and the isolation of all "Carriers" and clinical cases of the disease, along the lines we found last year to be best, have prevented the spreading of this disease.

Six deaths have occurred from diphtheria. Just the same as was noted last year, we have found the heavy toll of this disease has been taken on the young children, whose susceptibility is greatest.

It is with the greatest thankfulness I am able to inform you that we have now at hand, for free distribution, what is known as the Schick Test, a method by means of which individuals of all ages susceptible to diphtheria may be found out with absolutely no danger to themselves.

Along with this, we have also the diphtheria toxin-antitoxin which is used for immunizing people permanently against diphtheria. This immunization is 90 per cent. absolute for people of all ages, and with no danger attached to its use. Like the Schick Test, toxin-antitoxin is provided by the Provincial Board of Health, free of charge. Once the medical men, and the public, learn the value of these methods, and make use of them, diphtheria will become a comparatively unknown disease.

SCARLET FEVER.

Scarlet Fever has not been half so virulent this year as it was in 1920. We still find it hard to get people willing to understand the reasons for maintaining the full isolation period for this disease.

No special comment is required on the other Communicable Diseases, with the exception of two, tuberculosis and influenza.

TUBERCULOSIS.

I wish to call your attention to the paragraph in Miss Harris's report where she says "tuberculosis is a problem." We feel we are not in touch with all the cases of tuberculosis at present in this Municipality. There is no Communicable Diseases we are more anxious to ferret out, and place under the necessary precautionary measures for the protection of the individuals affected, the dwellers in the home, and the people with whom the afflicted persons come in contact.

The Oshawa Hospital has not as yet been able to provide special, isolated, and equipped wards for tuberculous people. It does the best it can with its present facilities. During the summer, three cases of tuberculosis were constantly looked after by this Institution.

INFLUENZA.

From July, through to the end of the year, influenza has been present with us and fairly common. In the earlier months the intestinal form of the disease was quite common. In the latter months some bronchitis was usually found along with the intestinal trouble. In October and November, bronchitis with pneumonia has been manifested in several cases, two or three of the cases having presented quite the usual appearances of the milder cases seen in the 1918 epidemic.

NATIONAL SANATORIUM CAMPAIGN.

It was especially because of our difficulties in coping with this disease in the homes, and in the Oshawa Hospital, that I have taken a particular interest in the National Sanatorium for Tuberculosis Million Dollar Fund Campaign, knowing full well that the success of this institution spelled the quickest and easiest solution of our difficulty. We already have six, or more, cases of tuberculosis confined in the four different branches of this Institution.

It is a matter of congratulation that the quota $7,500.00 expected from this municipality in the campaign will ultimately be exceeded. While the donations from small givers have been light, the municipality, and several of the leading citizens, has given large bequests to the institution.

BIRTHS.

The births reported in the Municipality, in 1921, have been 420, eighty more than for the year 1920. Of these births, 6 were reported as illegitimate children.

DEATHS.

The deaths reported in the municipality for the year 1921, have been 170, nine less than for the year 1920. One cannot fail to be shocked by the fact that over 41% of the death rate of this municipality was in infants under 1 year. If we exclude, from the deaths under 1 year, the 20 premature, and the 20 stillborn, as given by Miss Harris, for this year, under the lists of deaths, we find that 32 children of the 420 born in this year, that is, 7.6% died of intestinal and other diseases. Surely these percentages of deaths amongst the premature and stillborn, and infants under 1 year of age, indicate a large field of work in which the Public Health Nurses, if given an opportunity for doing pre-natal care and Child Welfare Work, can produce satisfactory results to the material benefit of this Municipality.

DEATHS ACCORDING TO PERIODS OF AGE.

Deaths under 1 year of age	70
Deaths from 1-6 years of age	12
Deaths from 6-15 years of age	2
Deaths from 15 years upwards	86

VENEREAL DISEASES.

There has been a definite improvement in social conditions in the Municipality, if one can judge from the number of cases of Venereal Diseases reported this year.

Of the Venereal Diseases reported, six were found in children under the age of 16 years, nearly 14.3%

Gonorrhœa	27
Syphilis	13
Chancroid	2

WATER SUPPLY.

Our municipal water supply has been of continued excellent quality and plentiful amount for the whole of the past year. No comment further than what is contained in the Sanitary Inspector's report is necessary, unless one would extend commendation to the Water Commissioners for the service they are giving the town.

MILK SUPPLY.

The milk supply is not on as satisfactory a basis as could be desired. There is no question but that the failure to pass the Pasteurized Milk By-Law has been a detriment to the milk supply of the municipality. The only guarantee of safety to our milk, and of protection to our children against intestinal diseases, and other diseases which may be transmitted by infected milk, will be by the insistance on the pasteurization of all milk used for food. Your Board should recommend to the incoming Council of 1922 the adoption of a Pasteurized Milk By-Law, such as failed to pass the Council of 1921. No more important Public Health matter, of more far reaching consequences than this, will appear before the Board of Health of 1922.

OTHER FOODS.

In referring to other foods I can do no more important duty than to repeat again the words of my report of 1920.

Not enough care is being given by the dealers who handle fresh fruits, vegetables, meat, pastry, etc., to the proper protection of their wares as exhibited for sale. I would suggest for your consideration the passing of a By-Law requiring all restaurants, fruit-stores, ice-cream parlours, candy shops, meat stores, fish stores, green grocery shops, bake-shops, pastry cook shops, and the like, to have a vestibuled entrance with screen doors at each end of the vestibule in the summer time, and at the inside end in the winter time; all other doors to be likewise screened; all windows to be screened their full size; all doors to have automatic closers. All raw fruit, candies, cakes, breads, meats, vegetables, etc., which may be eaten without further treatment, must be kept in glassed, screened, or closed containers or receptacles, until sold. When such articles are sold, they are to be wrapped in paper, or placed in bags, or other containers of such a type that the materials may be removed from the dealers' premises to the consumers' home, without any danger of hand, dust, or fly contamination, or other soiling of the contained matter.

POPULATION.

As a result of the industrial depression, and the limitation of the amount of work being turned out by our local industrial concerns, there has been a slight reduction in population, as shown by the Assessor's Roll. The population given in 1920 was 12,246 while for 1921 it is 11,582.

GARBAGE DISPOSAL.

Garbage collection and disposal have been carried out much more satisfactorily this year than last. A very creditable endeavour to level out the fresh garbage and cover it with ashes or waste dirt each day, has been carried out. This has resulted in far less complaint than usual from the people living in the vicinity of the Dump. No satisfactory method of disposal of garbage will be obtained in this town until an incinerator has been established.

STREETS.

The paving of King Street West from the Eastern boundary to the Canning Factory, together with the erection of the new cement bridge over the Creek on King Street and the grading up with gravel of the section of road between the canning factory and Mechanic Street, has made a very noticeable improvement in this part of the town. This work has been badly needed for a number of years.

The filling in of the holes in the pavement on King and Simcoe Streets, in the business section of the Town, has also been the fulfillment of a long delayed improvement. The grading up and filling in of Gibbs Street, where it crosses the Creek valley, while not yet completed, has opened up a very valuable means of access from East to West in the Southern part of the town.

Very little care has been given to the up-keep of the lateral or secondary streets of the town. To be sure, in the late Fall, some filling in and repair work was done on the very worst sections of roadway, but this work was in no way sufficient to put the streets in anything like reasonable repair. A systematic neglect of the secondary streets of the Town seems to have been carried out this past year.

The laying of the new Storm Sewer on Albert, Emma, Court, and Olive Streets, has once again put these streets into almost impassable condition, just when they had commenced to become decently useable.

It is absolutely necessary to remember that while money shows best on massed work, and thus presents tangible results, still a reasonable amount of repair should always be being carried out over the whole municipality. The inhabitants of such streets, business men, and general users of such streets, are surely entitled to some return of their taxes in the way of improvement of streets. It is to be hoped that next year a systematic overseeing, and keeping in repair of all streets, will be carried out.

OILING OF STREETS.

During this past year $1,225.00 has been spent in the laying on of waste tarry material from the Gas Company Works on the dirt roads. Prof. Rogers' report, which you have already received, has demonstrated the unfitness of such material for road oiling, surface binding, allaying of dust, etc.

It has been stated that however bad this material was it had one good quality in that it was a water-proofing for the road. This statement is open to a very great deal of doubt, in as much as no endeavour was first made to build a proper road with suitable ditches, proper crown, grading of roadway, and leveling of surfaces before this material was flooded upon it. In consequence of this neglect, puddles of this oily material lay in the roads for days after it was placed on the road, serving only to maintain muck holes, and provide dirt to be carried into every adjacent house.

It is questionable if the supposed saving in cost of oiling of roads this year was anything else than a waste of money.

If oiling is going to be carried out next year, it is to be hoped that it will be preceded by a proper road making first: that only a superior grade of road oil will be used, and that the road will be closed to traffic for a sufficient number of hours after the sprinkling to allow the oil to set in.

STORM OUTFALL SEWER.

It is much to be hoped that the completion of the main storm outfall sewer to the east will abate the nuisance which has bothered the south-easterly section of the town for so many years. Completely satisfactory results will not, however, be secured until the storm and sanitary sewers are absolutely separated in the manholes, and until all rain water leaders discharging into sanitary sewers have been cut off from such connection, to discharge either on the open ground, or into adjacent storm sewers.

RAIN WATER LEADERS DISCHARGING OUT OVER THE SIDEWALK.

A considerable number of citizens seem to be unaware of the fact that it is contrary to the municipal by-law to carry rain water leaders out over sidewalks, above the level of the roadway, to allow these leaders to discharge into the ditch, or on to the roadway. These slovenly looking discharge pipes should be immediately done away with.

GAS COMPANY EFFLUENT.

As the gas company effluent is still being discharged into the town sewers, every effort must be made to see that no such effluent shall be discharged into the sewers without proof having been produced that such effluent will produce no harm to the sewers, nor create any nuisance. Such effluent must, on no account, be allowed any access, under any excuse, to the sanitary sewers.

SANITARY SEWERAGE DISPOSAL.

We are still waiting for a satisfactory report of some economic method of sludge disposal before advising any steps to be taken towards the completion of our sanitary sewer disposal works.

At present, the chief things advisable for us to do are:—

(1) The reduction, as much as possible, to a minimum of the amount of waste water passing through the sanitary sewers, and the confining of this discharge to a true house sewage effluent.

(2) The protection of the Sanitary sewerage effluent from the mixing with it of any chemical material which would be liable to interfere with the fermentative, putrefactive and nitrificative processes carried on by the bacteria in the sedimentation tanks.

WATER SUPPLY, DANGER TO.

Until the completion of the sanitary sewage disposal system, and the chlorination of the effluent, every precaution must be taken to safeguard our water supply. Even though we have the new intake pipe drawing from a depth of thirty-five feet of water, and from 2,700 feet out, we still must safeguard our water supply by the addition of a proper amount of alum and of chlorine in the same way as we have been doing previously.

While the quantity of the water we are able to obtain depends on the intake, the pumping house machinery, and the mains, the quality of the water is always dependent on the weather conditions, the efficiency of the filters, and the proper addition of the necessary amount of alum and chlorine to the water as it passes through the filters. Additional to this also must be the maintenance of cleanliness of the supply mains from dirt and stagnant circulation, and also the cleanliness of the interior of the water tank.

One hundred and eighty house connections have been added to the water services this year at a cost of $19,600.

HORSE TROUGH.

Two bank premises, which have been remodelled this year, have taken advantage of the opportunity to install sanitary drinking fountains for the benefit of the public. While on the question of water supply, I would like once more to call your attention to the necessity of removing the horse trough from the south side of King St. E., close to Simcoe St., to some more suitable locality, and its replacement by a sanitary fountain for the use of citizens and dogs.

NEW BUILDINGS.

By far the most noticeably outstanding improvements made in the town this year have been those in business buildings in the central part of the town.

MUNICIPAL BUILDINGS.

Chief of all has been the removal of the municipal offices, the town Engineer's department, the Waterworks Engineer's department, the Department of Health, the Education department, the office of the Children's Shelter, and the Red Cross rooms, to the Pedlar House in the Central Park ground. Next in order is the conversion of the old town hall building into an enlarged fire hall with sleeping quarters for the men, a new police office on the ground floor, a remodelled and up-to-date lock-up, and a redecorated auditorium, special attention having been given to the improvement of the acoustics of this part of the building.

STORES.

Probably the next striking change has been the remodelling of the Queens Hotel into four fine stores, with a modern front.

After these the important changes are the remodelling of the Cotter property on the corner of Simcoe and Bond Sts., by the Bank of Montreal for bank purposes; the new front on the Mitchell stores; the extension of the Dominion bank westerly to absorb the adjacent building, giving it handsome and commodious quarters; the two new stores on Simcoe St. N., occupied by Harper & Clemens; the store being built next to this by Mr. Lovell, and the new front placed by Mr. Everson in the property on the north-west corner of Bond and Simcoe Sts.; also the remodelling of the Methodist parsonage on Simcoe St. S.; and the store being built by Mr. Engel on the west side of Simcoe St. N. These new buildings, together with a few minor alterations made in other business blocks, complete the changes which have been rapidly taking place in the business section of the town, and will give an added air of business prosperity and financial stability.

Fewer houses have been built this year than in the preceding two years, but several of these have been of specially good quality. All told, the year has been one of important building activity.

BUILDING BY-LAWS.

The departure of Engineer Shupe from the municipal service about the middle of the year, delayed the putting through of the Building By-Law, which it had been hoped would have been passed through the Council during this year. It is seriously to be desired that the new by-law will be prepared in a completed form for acceptance by the incoming Council of 1922. A proper code of building regulations is the most important matter now required by this municipality.

TOWN PLANNING.

The appointment on May 20th of this year of a Town Planning Commission marked an important step forward. It is to be hoped that this body will be able to secure at an early date an acceptable town plan with recommendations as to town zoning, park and play-ground allotment, development regulations, etc., such as to guarantee the growth of the municipality in all those directions which will lead to best civic development.

ISOLATION HOSPITAL.

No further action has been taken this past year in the matter of an Isolation Hospital and the question remains the same as at the time of my last report in November, 1920.

While the demand for such an institution has not been as urgent this past year as previously, the need is still as great.

OSHAWA GENERAL HOSPITAL.

In my last report attention was called to the large amount of maternity work being done in the Oshawa General Hospital. It was noted that nearly fifty per cent of all the obstetrical work of the municipality had occurred inside of that institution. In 1921 there has been some falling off in the percentage, which for this year is 31.5%. About 12.2% of the births reported at the Oshawa Hospital were premature or stillborn, while outside of the institution the same cases were about 10.1% of the births. There is *urgent* need for a special building or wing for this institution in which maternity work can be carried out. Several reasons may be noted.

(1) To absolutely separate and safeguard women who are going to become mothers from any contacts with other classes of patients in the institution.

(2) To provide accommodation for the infants born in this institution, and thus to remove them from the Main Building where they are a nuisance and a distress to all other patients.

(3) To protect the mothers and babes from acquiring any communicable diseases which might be brought into the general institution, either by patients or visitors.

(4) To allow an opportunity of having always one *clean* building in which the mothers and babies are protected from any danger of contamination with other disease.

It will be noticed the hospital reports in its list of deaths five cases of infants dying from malnutrition. These are children who, having become seriously ill before being discovered by a physician, were sent into the hospital too late to be benefited by any treatment they might receive there. They belong to the class of cases which it is hoped the Child Welfare Clinics, and the Public Health Nurses' visits will soon cause to disappear from our hospital and public health records.

The hospital has now nearing completion a much needed addition to the Nurses' Home, in which can be accommodated eight more nurses than are at present in training in the institution. In this extension, the Hospital Board is taking time by the forelock. Once the building is completed and occupied, it will be fully staffed for the proposed increased bed accommodation in the hospital proper, which the proposed additions now in contemplation will provide.

It is to be hoped that before very long the hospital Trustee Board will be able to see its way clear to providing a separate small building for:—

(1) The reception and observation of suspect new cases coming into the building.

(2) The accommodation of unpleasant cases and non-placardable communicable diseases, which may be sent into the hospital, and which must be received under the provisions of the Public Health Act. The placardable diseases are excluded from General Hospitals.

(3) The reception and treatment of venereal diseases, both outdoor and indoor clinic cases.

While such a building must not be construed to be in any sense an Isolation Hospital, but only an endeavour to comply in the best possible way with the regulations for the control of hospitals, it still represents a building of such importance in the field of preventive medicine that the Local Board of Health would be justified in recommending to the Municipal Council the granting of financial aid to the construction of such a hospital unit.

CHILDREN'S AID SOCIETY.

The Children's Aid Society has been finding difficulty in maintaining accommodation in the Shelter for the steadily increasing number of inmates that is brought under its control. Difficulty has been found this year in placing children *fast enough* to relieve the pressure in the Shelter.

As a consequence of the congestion in the Shelter, epidemic diseases have several times given the Inspector and the Matron great worry to know how to prevent all the children in the Shelter becoming affected.

This difficulty has been met by the erection of a small and suitable building, close to the Shelter, which will be used in future as a receiving building, observation ward, and isolation building. This structure has been erected at the moderate cost of about $1,800. It is the first of its kind to be erected by any Children's Aid Society in the Province.

SOCIAL WELFARE ACTIVITIES.

This year, like last year, has been marked by an intense activity of all organizations in the municipality which are interested in Welfare and Community Service Work. A very great deal of educational work of a splendid type, as well as real, material help, has been given to the community.

Several outside speakers, each of reputation in some special field of work, have addressed meetings in the town at different times, and under different auspices. The under-privileged child is being especially looked after.

Y. M. C. A.

In August of this year, it was determined to put on a campaign to raise funds to clear the Y.M.C.A. of its indebtedness, as well as to put it in shape to more efficiently carry on that real community service which it has so splendidly undertaken, and is carrying out. Approximately, $15,000 was raised by this campaign. This fund should be sufficient, along with the increasing interest now being taken in the organization to keep the Y.M.C.A. on a solid footing. Over twenty-five organizations, of different community interest, have made use of this organization's building as a centre for their work this past year.

PUBLIC LIBRARY.

Moved by the spirit of the time, the Public Library Board have increased the service given by the library, both in hours in which it is opened to the public, as well as in number and quality of the books and magazines proffered to the public.

COMMUNITY WELFARE ORGANIZATION.

The Community Welfare Organization, which came into existence last winter, was reorganized this fall, and has done a very great deal of relief work to alleviate the distress in families of those who have been out of employment. A very great deal of the unemployment problem has been solved in the cleaning up of the Central Park property. This work is now nearing its completion. As an additional means of giving relief to the unemployment, the St. Julien storm sewer was commenced, and is rapidly drawing to its completion.

It is calculated that about $7,000 will be expended in relief work on this sewer.

SCHOOLS.

School Attendance.

High (1) (with 1 portable)	151	161	312
Separate (1)	120	98	218
Public (5) (with 2 portables)	933	952	1,885
		Grand Total	2,415

Assessor's Roll (1922) gives children shool age (5-16) 2,485, part school age between (16-21) 847.

At present there are, approximately, 98 boys and 113 girls attending High School who would come under the requirement of the Adolescent Act passed last year.

SCHOOLS AND PORTABLE SCHOOLS.

Three Portable Schools have been erected this year, one at the High School, one at Albert Street Public School, and one on Hillcroft Street. While these buildings may be absolutely necessary to meet the urgent demand for increased school accommodation, they are but a poor make-shift at proper school accommodation. It is greatly to be hoped that no necessity will be found to perpetrate any more of such structures in the municipality, and that some means will be ascertained, this coming year, by means of which to finance the necessary Public and High School increasing accommodation requirements.

INDUSTRIAL AND VOCATIONAL TRAINING.

The Industrial Evening Classes which opened November 1st, have been very well received, large classes being attended. There are in attendance for all classes a total of 174 males and 168 females. Mr. Rutherford's report on Vocational and Technical Training has shown the urgent necessity of special accommodation being provided for those students who will be compelled to attend school under the Adolescent Act, and who do not desire to take up Commercial, Teaching or University Preparatory training.

SCHOOL NURSE.

Miss Sieling, the Public School Nurse, has been doing splendid work, and is producing noticeable results in the pupils under her care. It is to be hoped a similar Nursing Inspection will soon be established in the Separate School. It is very unfortunate that this community service cannot be given to all scholars, no matter what school they attend, and not as at present, only to Public School children.

SCHOOL DENTIST.

Last year the Board of Education appointed a school dentist to look after the Public School children's teeth. A very great demand has been placed on this dentist's time. Very satisfactory work is being done.

SCHOOL MEDICAL OFFICER.

It seems to me that the time has now come when a Medical Inspector should be appointed to the schools. The very great assistance which such an official can give to the scholars, as well as to the School Nurse, if assisted by a thorough system of follow-up work, would be of untold value in improving the physical welfare of the scholars.

HOME AND SCHOOL CLUBS.

Home and School Clubs have now been established in connection with all the schools. The members are evincing the greatest of interest in all those affairs which pertain to the schools and the scholars. Such organizations will be of very great value in educating the mind of the public along the lines of modern views on school development and education.

Our school children, nearly 2,500 strong, as mentioned above, are the greatest invested potential municipal asset which this town possesses, representing at a very conservative estimate a state valuation of about $5,000,000. Surely we need consider no expense incurred in the erection of new schools for the education of these scholars as *being too great.*

FOREIGN SPEAKING ELEMENT.

It has appeared to me that we are not doing our duty to the foreign-speaking element, of which we have so many in our midst, nor are we doing what is right by ourselves, when we do not provide some class of school to which foreign-speaking people may attend, after working hours, to learn the English language, both spoken and written. We cannot expect these people to be good Canadian citizens unless we know they can understand us, and we understand them, in a truly Canadian way. Without such education, these people live by themselves, and in ways different to ours, maintaining their old home customs and habits, advancing but little in citizenship, suspicious and distrustful of any advances we may make towards them. We have to wait until the second generation comes along and goes through our schools before we can have any real knowledge of how these people are practising their Canadian citizenship, and shaping their destiny.

POOL-ROOMS.

From time to time considerable discussion has arisen as to the granting of license to pool-rooms, and also as to limiting the number in the town to a fixed number.

As it seems to have become an adopted policy of the Municipal Council to license pool-rooms, not limiting the number, looking upon them as business places, it seems to me there are certain facts which should be given deep consideration.

A pool-room license should not be issued, only because the applicant for a license is wanting to operate a pool-room and billiard-hall on an absolutely business basis:— that is for his own personal gain, nor with the underlying notion which seems to be in the minds of some people, that he is a public benefactor who has been kind enough to open a refuge against inclement weather, where young men may congregate to while away the tedium of hours for which they have no fixed use at that time.

If rest-houses and waiting-halls are necessary in the centre of this municipality, the town itself should provide them as community halls, and as part of a community service, under the competent supervision of a regularly employed municipal employee, male or female, as conditions may require.

The ordinary pool-room, as ordinarily conducted, does not in any way serve to solve the problem of a community rest-house. It is primarily, and above all things, run in a purely business way for gain, and if no satisfactory income were being derived from its operations, the place would soon be closed up.

It is a class of business which, unfortunately, no matter however carefully supervised, offers quiet opportunities for gambling, and the loss of needed capital to those who, oftentimes, can ill afford to lose it, and this occurs quite easily without the owner of the establishment, no matter how conscientious, being able to interfere with the gambling.

I am not an objector to pool-rooms because I believe that a game of pool or billiards, when properly conducted, is not only recreational, but capable of being placed on such a scientific basis as to become highly educative to those who have learned to play such games, and does often offer opportunities of rest from nervous worry, and of putting in of waste time, which help very much in making the day pass, and living worth while.

We must never forget that there is a very large percentage of the population that does not feel inclined to spend all, or much of its spare time, in a public library, concert hall, and so on. To many of these people a game of pool serves the useful purpose of filling in that spare time, particularly at that season of the year when outdoor sports may not be indulged in, and when other recreational facilities are not offered for those hours of the day.

It is the duty of the municipality, however, when once granting a license for the carrying on of any type of business to prove that the operation of that business is not only being carried out in a reputable way, but also along lines which conform to the best business ideals of that type of calling, and the best interests of the municipality.

If one were asked "Do the pool-rooms of Oshawa conform to such best ideals?" one would have to ask "What are those ideals?" The only way in which that question could be answered would be by reference of the question to those who could speak with authority, such as probably the Brunswick-Balke Co., or large properly constituted club organizations which provide facilities for games for their members.

Such questions, as for instance, floor allotment-space per table, lighting of the room, heighth of ceiling, ventilation, necessary seating accommodation for those playing the game, permitted presence, or exclusion, of lookers-on, allowance of conversation, and type of conversation permitted, location of the room, upstairs or down-stairs, freedom from inspection from the street, lavatory accommodation, method of thoroughness of supervision, quality and upkeep of tables and appliances which are used in the game, and several others of like nature could be asked.

From the replies, definite regulations could be made which would be reasonable and capable of being carried out, and would be the municipality's guarantee to the patrons of such institutions that they could receive the greatest amount of personal benefit, with the least amount of discomfort and improper training, which can be obtained from such a method of putting in their time.

I have heard it stated:—

(1) That it is questionable if there is a first-class A.1 table for straight pool in the town, except such as may be in private clubs and houses.

(2) That at present there are only two full-sized English billiard tables, outside of the ones at the Thirty Club and Y.M.C.A., or private club or house, and that these two have been placed in the last two weeks.

(3) That in many cases the tables are in bad repair, with dead cushions.

(4) That no proper supervision of levelling up of the tables is carried out, nor any endeavour to maintain standard height in the tables.

(5) That cues are often in very bad repair, and of poor quality.

(6) That many of the rooms are very poorly ventilated, with no understanding of, nor attempt to procure, what is best lighting for pool and billiard tables.

(7) That the provision for lavatory accommodation could be very much improved.

(8) That many of the tables are too close together to allow ease of play, and proper scientific carrying out of the game.

(9) That in many places non-players are allowed to congregate in the pool-rooms in such numbers as to interfere with the carrying out of the game, and that if chair accommodation is placed for the players this or most of it is occupied by non-players.

Of course, I know that it is an old business saying, "People get what they want." I think it would be better to say, "People often put up with what is provided for them."

Too often the amount of tobacco smoke and noise and unpleasant language is brought to the attention of those who are not users of the pool-rooms, but have, unfortunately, to come in contact with them. Then such people complain.

All these matters which should be considered very carefully by any license committee which assumes, at once, the responsibility of supervision of public morals, when it issues a permit of license to operate a pool-room, or any other gaming hall, whether the members of such committee realize it or not.

SOCIAL SERVICE COUNCIL.

With all the important and outstanding works in the various fields of Community Service which have been undertaken in the last two years, no attempt has as yet been made to correlate all these energies so as to enlist your sympathies in Social Service work, except of a very limited and transient type. In November, on the 20th of the month, several addresses by prominent members of the executive of the Social Service Council of Ontario, were given in different churches in the town. On November 21st, similar addresses were made to organizations which it was believed would stimulate interest in Social Service work. On the evening of November 21st, in the King St. Methodist Church, a local branch of the Social Service Council of Ontario was brought into being. As yet, the organization locally has not been completed. It is hoped, however, that before the new year this necessary organization for the rounding out of a full field of Community Service will have developed into active operation.

In conclusion, permit me to thank the members of the Board for their unfailing kindness and sympathy exhibited towards the work of the Health Department at all times during the year now past.

Yours truly,

T. W. G. McKAY, M.D.,
Medical Officer of Health.

Oshawa, Ont.,
November, 18, 1921.

Dr. T. W. G. McKay,
Medical Officer of Health,
Oshawa, Ont.

Sir:

TABULATIONS OF BIRTHS AND DEATHS.

		In Municipality Outside of Hospital	In Hospital
Total Births	Normal Children	265	115
	Premature	10	10
	Stillborn	14	6
Total Deaths		124	46
Deaths from Malnutrition reported by the Hospital			5
Pre-natal and Natal Causes.	Premature Births		19
	Stillborn		21
	Injury During Birth		1
	Toxæmia following Eclampsia of mother		1
	Acute Septicæmia following G. C. Post Partum Infection of mother		1
	Placenta Prævia		1
	Strangulation		1
	Hydrocephalus		1
	Congenital Malformation of Chest		1
	Congenital Stenosis of the Colon		1
Nutritional Defects.	Marasmus		3
	Malnutrition		2
	General Debility		3
	Senile Decay	1	
	Senility with Inanition	1	
	Senility	5	7
	Natural Causes		2
	Goitre		1
	Diabetes		2
Accidental	Suicide		1
	Accident		1
	Burns and Shock (Sulphuric Acid)		1
	Foreign Body in First Part Duodenum		1
Shock.	Convulsions		1
	Surgical Shock		1
	Surgical Shock with Hæmorrhage		2
	Surgical Shock with Hæmorrhage from the Stomach		1
	Surgical Shock with Rupture of the Bladder		1
Anæmia.	Pernicious Anæmia		1
Cancer.	Cancer of Jaw		1
	Cancer of Face and Neck		1
	Cancer of Breast		1
	Cancer of Stomach		1
	Cirrhosis of Stomach		1
Intestinal Diseases.	Intestinal Obstruction		2
	Intestinal Infection with Marasmus		1
	Gastro Intestinal Infection		1
	Enteritis		1
	Entero-Colitis		1
	Ilio-Colitis		3
	Diarrhœa (Acute)		2
	Cholera Infantum		3
	Appendicitis		3
	Sapræmia from infected food		1
	Peritonitis		3

Liver Diseases.	Abscess of Liver	1
	Catarrhal Jaundice	1
	Infective Cholangitis	1
Kidney Diseases.	Uræmia	2
	Hydronephrosis	1
	Nephritis (Acute)	1
	Nephritis (Chronic)	4
	Nephritis (Chronic with Dropsy)	2
Heart and Vascular Diseases.	Heart Disease	4
Cardiac.	Endocarditis	3
	Endocarditis with Valvular Disease	1
Vascular.	Arterio-Sclerosis	1
	Arterio-Sclerosis and Cerebral Softening	1
	Gangrene	1
	Paralysis	3
	Apoplexy (Cerebral)	3
	Apoplexy and Right Hemiplegia	1
	Apoplexy and Hemiplegia	1
	Right Hemiplegia and Paralysis	1
	Cerebral Hæmorrhage	1
Disease of the Nervous System.	Lateral Sclerosis	1
Questionable Cause.	Seborrhœa	1
	Eczema of Face and Head	1
Respiratory Diseases.	Empyæma	1
	Influenza and Broncho Pneumonia	1
	Broncho Pneumonia	2
	Pneumonia	5
	Terminal Pneumonia	1
Infectious Diseases.	La Grippe	1
Influenza.	Influenza	4
Tuberculosis.	Phthisis	2
	Tuberculosis of the Lungs	6
	Tuberculosis	2
Diphtheria.	Catarrhal Laryngitis?	1
	Tonsilitis (Acute?)	1
	Diphtheria	4
Typhoid Fever.	Typhoid Fever	3
Scarlet Fever.	Scarlet Fever	1
Venereal Disease.	Gonorrhœa (with Septic Infection)	3
Encephalitis.	Encephalitis L.	1
Lethargica.	Encephalitis L. with Intestinal Trouble	1
Meningitis.	Meningitis (Acute)	3
Otitis Media.	Otitis Media	1

I have the honour to submit my report for the year 1921.

SURVEY.

A general survey of the town has been commenced and is being continued until the exterior and interior of every building has been inspected and the condition of the same recorded. A complete record of all conditions: streets, sidewalks, sewers, water supplies, buildings, together with improvements, is being ascertained with all possible accuracy. These records are necessary for the assistance of the department.

SITUATION.

The situation of the town of Oshawa, with regard to the township of East Whitby, is one that requires consideration. The township bordering on our west at Park Road, and south, the Base Line and Cedardale, is gradually becoming a suburb of no mean proportions. Distance is lacking whereby a safeguarding border line might exist. Our municipal laws are enforced on our side of the streets, yet there is no one to supervise, or see that similar laws are carried out on the East Whitby side. This not only prevents adequate protection against communicable diseases, but creates dissatisfaction among the citizens on our side of the street. Nuisances are abated on the town side but in a great number of cases are not interfered with on the township side. An early annexation of Cedardale and of a part of the township west of Park Road is the best remedy for coping with these conditions. Also, the annexation of these parts of the township will more readily insure the construction of that badly-needed utility, a sanitary sewer for Westmount and Cedardale. In making this survey the whole boundary inclosing the 8½ square miles, designated as Oshawa, has been covered as well as observations made of the adjacent surroundings.

STREETS.

Our town plan shows 171 streets. There are actually 117 laid out, with a mileage of approximately 53 miles. Of these, eight miles are paved. The most noteworthy improvement this year has been the construction of the bridge on, and the paving of King St. W. The unsightly entry to the town, via the main highway, has long been an eye-sore to the citizens of Oshawa, and they may be congratulated that in a few weeks this bridge will be completed, and the entrance to the town from the west will have been much improved. Oshawa has now completed over fifty miles of sidewalks, this amount having been reached by an additional two and three-quarter miles this year.

PUBLIC PARKS.

By the addition of Lakeview Park (that splendid gift from General Motors, Ltd., of Canada) the town now possesses 33½ acres of playground and recreation space. The great number of persons to be seen at all times during the summer season at Lakeview Park expresses the public appreciation of that gift.

Although we lack a public swimming pool, handy to the town, much use, for this purpose is made of the creek west of the town, from south of the golf links to a few hundred feet north of King St. bridge. A walk round here during the summer months, will show that citizens of all ages bathe frequently in this narrow, shallow strip of water. Part of this creek and the lowland surrounding it, which one may venture to say, will never be used for building purposes, might, at some future date, be procured as a small park or playground for the people of the north-west and west side of the town. With a very little work, a fairly satisfactory swimming pool could be constructed. Its value in allowing children to learn to swim would repay for its fitting up, leave alone the pleasure it would confer on the young children of the north part of the town.

Another year should not be allowed to pass without every effort being made whereby proper, sanitary lavatory accommodation may be placed in Alexandra and Lakeview Parks. The old wooden privy has long ceased to have its day.

The greater portion of the people in both town and country now adopt a sanitary convenience, other than the old wooden privy. This year we have heard a lot about the unsanitary condition of the toilets in Alexandra Park, yet these toilets were no worse in condition than they have been in previous years. It is the people who have changed. They have begun to realize that unsanitary conditions should no longer be tolerated. Even though it becomes an additional public expense, all conveniences for the public use should be good and sanitary. We have no legal right to insist upon the provision of up-to-date toilet in either of these parks, or we would have enforced it a year ago. In asking for it, we have, however, a right to appeal to the sense of decency and rights of the citizens.

SEWERS.

We have now over seventeen miles of sanitary sewers in the town of Oshawa, one-quarter of a mile having been added this year. The completion of the trunk storm sewer from Ritson Road, via Olive Ave., Court St. and Albert St., as far as Bruce St., the distance of about one mile, brings the total to over seven miles of storm sewer. This recent construction is the most important addition which has been made in the sewer system.

At the time of the original laying of the storm and sanitary sewers in the town, which ran diagonally across to the Ritson Road where the present out-fall is, an old box drain was made use of as the out-fall for the storm sewers which drained to the south-east. It was thoroughly understood at that time that at some future date the use of this box drain would have to be discontinued, and a properly constructed main out-fall sewer installed. Prohibitive cost withheld the initial building, and delayed any question of construction until threatened claims for damages for repeated flooding of cellars in the centre and south-east sections of the town forced action to be taken. As recommended by Messrs. Gore, Nasmith and Storrie, at a time when labour and material was at a peak price, this sewer was to have cost $95,000. Some alteration in the proposed course of this sewer shortened its length for some hundred feet. The construction was also carried out without what might be called highly technical and skilled labour. The consulting Engineers and their assistants were not in daily supervision of the work as it proceeded, it having been decided to proceed with the laying of this sewer with purely local labour as much as possible, the idea apparently having been that the elimination of specially trained pipe layers and technical engineers in the field work would produce a material reduction in cost. The local Municipal Engineer, in his multifarious duties, had to depend upon the assistance provided him. The town has been congratulated on the fact that the construction cost of this main out-fall sewer at completion was $20,000 less than the estimated cost given by the Consulting Engineers. This has, of course, been materially influenced by the fact that a rapidly falling market for materials and labour was favourable to the town, being as it is one of the most important parts of our sewerage system, it is sincerely to be hoped that a reduction in cost of such a material amount, as has been indicated, will be accompanied by the proof, as time goes along, that the town lost nothing by its determination to carry the work through, without this special outside help and advice spoken of above.

WATER MAINS.

Our 25½ miles of water mains have been greatly improved this year by the addition of an 18-inch force main running parallel to the old 12-inch force main from the pumping station at the lake to Albert St. at a cost of $112,300. This will give ample protection if a break should appear in the main. The daily water service averages fifty-seven gallons per individual. The new 30-inch intake has been laid and completed this year, and is a great advantage over the old intake. The new 30-inch intake extends about 2,700 feet out into the lake, and is at its outer end at a depth of thirty-five feet, which is sufficient for it to be comparatively uninfluenced by turmoil in the surface waters in time of storm. The cost of this new intake was $94,530. The total cost of the additional construction work executed by the Water Commission this year, including new pumping machinery, meters, well screens, and connections, slightly exceeded $278,000. We are glad to feel that we have now a safe water supply, both filtered and chlorinated. The absence of typhoid fever, and other water-borne diseases from our municipality, proves that money spent upon a safe and adequate water supply is not to be regretted. Water samples taken during the year to the number of 106 show a continuously good supply free from contamination.

Four wells have been condemned during the year owing to intestinal sicknesses having become present in the inhabitants of dwellings making use of this supply. Samples taken of the water showed the presence of colon bacilli. These wells were at once ordered closed and connections to the town water main ordered to be immediately installed.

Buildings.

Noticeable this year is the reconstruction of buildings upon the man street (Simcoe Street). The alterations very much improve the appearance of the town. There are over 2,600 buildings in the town of Oshawa, ranging in value from a few hundred dollars upwards. The necessity for a Building By-Law remains evident, and becomes more insistent as each new application for a building permit is made. Poor workmanship, and poor principle of construction, has many times been observed, yet when covered with lath and plaster, paper or paint, the defects are not seen. Nevertheless, they exist, to the detriment of occupiers, or future purchasers. Poor workmanship and construction should not be encouraged in this town of Oshawa, where we have so many first-class mechanics in all branches of the building trades, who are only too willing to work under the strictest supervision, having that pride in their work which led them to choose their respective trades as their ideal means of livlihood. From a public health point of view, the most important buildings constructed this year are the Isolation Building at the Children's Shelter, and the addition to the Nurses' Home. Both of these constructions were badly needed.

Plumbing.

Ninety plumbing permits were issued this year, each calling for from one, to in some cases nine visits of inspection. Three hundred visits, all told, have been made in inspecting plumbing systems. We must express our appreciation of the work executed by the Oshawa plumbers. We find them willing at all times to do what is right. We are sure that the most pleasant feeling exists between master plumbers, journeymen plumbers, and your Inspector.

FOOD.

MILK.

Six licensed dealers are supplying milk in the town of Oshawa, the milk being obtained from producers whose farms are located within a sixty square mile area surrounding the town of Oshawa.

All local dairies are regularly inspected, and 43 milk samples have been taken during the year. The results of the analyses show these samples to have the required amount of butter fat 3.25 per cent. Five farms have been visited from which the milk is produced and supplied to local dairies, and have been found to be fairly satisfactory. Suggestions for improvements were made and carried out; other improvements are anticipated when financial conditions will permit.

Four licenses were refused, the applicants having premises of such an unsanitary character that they could not be allowed to peddle milk to the public. Two prosecutions were made and small fines imposed to prevent the peddling of milk from unsanitary premises.

ICE CREAM.

A large number of ice cream peddlers operated from wagons before this department became aware of their existence. Upon discovery, written instructions were given each one, insisting that the ice cream be peddled direct from the store at which it was purchased and all left over ice cream to be returned there. Under no circumstances, was ice cream permitted to be taken to the houses of the peddlers. We are prepared for this business next year, and will have it well in hand before licenses are issued.

BAKERIES.

Bakeries and bakers' wagons have been inspected. Instructions to wash and clean delivery wagons have been issued in two cases.

BUTCHER SHOPS.

All butcher shops have been inspected and meat supply supervised as far as shop supervision can be carried out. The only effective manner of inspection is to have a public abbatoir, where all beasts may be inspected before and after slaughter by a competent veterinary surgeon.

The rending of fats and making of headcheese in some of the stores has caused complaints to be laid. These complaints have been investigated and suggestions made whereby the odour from the cooking may be carried off satisfactorily. As this is part of the business of most butchers, we hesitate to take drastic measures to prevent repetitions of these, which, after all, are not serious nuisances. We have hopes that, in time, alterations of the premises will insure a proper place and method for carrying on this part of the business without interference with the comforts and rights of neighbours.

FISH.

There has been an increase this year in the number of fish hawkers. The disposal of waste matter from this business has called for several investigations, which, upon suggestion, have been satisfactorily rectified.

GENERAL STORES.

General stores, particularly round the poorer districts, have frequently been inspected, and eatables which were not in fit condition to be consumed as food were seized and destroyed. Lack of a sufficiently extensive business, and just how to order goods is, we have found, responsible for this. The stock gets old; in the case of meats, it begins to decompose. Other foodstuffs get damp and musty through improper storage. It is felt that the loss of the goods is sufficient warning, therefore prosecutions are not entertained.

COMMUNICABLE DISEASES.

The total number of communicable diseases for the year is 439. Of these, only 166 came under the notice of your Inspector for his action, they being the placardable diseases. Upon the report of any of these cases, the house is placarded, and instructions given as to quarantine. At the termination of the disease, the fumigation of a room, or rooms, or, in some cases, the whole house takes place, and the placard is removed. The number of rooms fumigated this year amount to 396, the fumigator used being formaldehyde gas for rooms, and bi-chloride and hydrochloric acid for linens, washable articles, floors, furniture, and baseboards.

GARBAGE.

The collection of garbage by the contractor for this year has been most satisfactory. Complaints, compared with previous years, have been almost negligible. Collections are made regularly, in a cleanly manner, and with due civility on the part of the garbage collector. The covering of the wagons with tarpaulin has proved to be a decided improvement, eliminating the blowing about of dust from the collecting wagons.

SCHOOLS.

All schools have been inspected and separate reports submitted.

INSPECTIONS.

Total number of inspections regarding nuisances of various kinds 1,493.

INSPECTIONS.

Water samples taken—Town Water	106	
Wells	9	
Milk samples taken	42	
Plumbing installations	90	Inspections 303
Communicable diseases placarded	166	
Fumigated rooms	396	

In concluding this report, I desire to express appreciation of the services rendered by the Public Health Nurses, and Miss Minaker, the Department stenographer. One would expect that added help would lessen the work, but such is not the case, for the increase in calls for work to be done by the officials of the Department has steadily grown apace. Under your able command, and untiring energies, the members of the Department are meeting all possible branches of public health work, many of which would, were it not for the Nurses and the stenographer, have to be ignored altogether.

It is gratifying to be able to state that it means long hours, and hard work, to answer the many calls that come from the public for our assistance. This leaves no doubt about the thoughts of the public concerning the work of the Department.

All of which is respectfully submitted,

FRED C. PALMER,
Sanitary Inspector.

Oshawa, Ont.,

November 10, **1921.**

Dr. T. W. G. McKay, Medical Officer of Health, Oshawa, Ont.

Dear Sir:

From November 1, 1920, to October 31, 1921, my annual report of the Nursing Service of Public Health is herewith submitted.

As the communicable diseases have figured largely in the early part of the year, the following shows the number of each disease reported for the year:—

Chickenpox	110	
Diphtheria	70	6 deaths
Diphtheria "Carriers"	64	
Mumps	64	
Whooping Cough	51	
Tuberculosis	23	5 deaths
Scarlet Fever	22	1 death
Influenza	8	
Erysipelas	7	1 death
Smallpox	7	
Typhoid Fever	6	
Measles	3	
Meningitis	3	1 death
Impetigo	1	
Total	439	

Each contagious case has been visited and isolation made as complete as possible. The member of the household who is caring for the patient is advised along lines of quarantine, personal hygiene, general health conditions, and prevention of disease. The wage-earners are permitted to continue their duties as usual, providing they are honest with themselves, their family, and us in helping with our work of quarantine and protection of the public. With very few exceptions, individuals and families have gladly received and adopted principles of public health, realizing that it is their duty to each other, and to the community. This year we have not experienced so much difficulty in crowded housing conditions, thus making our duties lighter in communicable diseases.

Preventive medicine has demonstrated its great and lasting value in connection with diphtheria. Without the keen co-operation of the doctors in administering antitoxin to all contacts in the home, and to "carriers" of diphtheria, stamping out of this disease would have been impossible in so short a time. As diphtheria has been prevalent early in the year, and again this fall, every precaution has been taken to trace the source of the spread. More and more we have come to consider the individual himself, and to try to teach him to maintain health, to avoid infection, and which constitutes hygienic living. The mortality rate from diphtheria in the year is six, though three cases were moribund when medical assistance was called. Through education, people are beginning to realize that a throat infection is not a matter to be trifled with, and to be on the safe side by calling for medical advice early.

The reports of measles, whooping cough, mumps and influenza, do not, to any degree, indicate the prevalence of the disease.

The Child Welfare Clinics have been hubs of activity each week throughout the year, and a great deal of intensive work has been given this branch of public health. It does not take long to see results. The reduction of the infant death rate from intestinal causes is one of the greatest indications that this work is most essential and proof that we have obtained results. Mothers bring their babies very frequently to the Clinic for weighings and advice regarding feedings, clothing, child hygiene, and it is particularly gratifying to have the young mother with her first babe—always interested in getting the knowledge whereby her baby will grow to be a perfect type of manhood or womanhood. Where physical defects, such as tonsils and adenoids, are found, eye and ear defects hernia and cases of illness are all referred to the family physician. Many physical ailments have been immediately remedied by the physician, particularly tonsils and adenoids.

In connection with child welfare many calls have been received from mothers outside of Clinic attendance, and from the medical profession for cases where a baby is suffering from intestinal infection. Here treatment is prescribed by the doctor and formula adjusted. Much educative work and bedside care is given in this way; a large number of cases require daily visits for treatment, and invariably intensive work will last a week to ten days on one case.

The Clinic opened for the non-English speaking mothers in May and has been well attended. Possibly the social and advisory influences given at this Clinic will have a more far-reaching effect than the primary intention of the well baby Clinic.

The stations registered for birth and mortality rate of infants is as follows:—

	1921
Deaths registered under 1 year	
Intestinal	18
Premature	20
Stillborn	20
Other Causes	14
	72

Births registered 420.

Modern medical teaching indicates that under proper care a very great number of these little lives might have been saved.

We are much gratified upon the report of the considerable decrease of infant mortality from intestinal infection. The doctors have co-operated in all cases possible, for under their directions treatments have been given, formulæ prepared, and general care carried out, demonstrating the value of education in the care of infants. No doubt the Child Welfare Clinics throughout the year have done much to stimulate health work, and indicate the great need of general teaching of infant nutrition and child hygiene.

The appalling rate for stillborn and premature children shows the great necessity for the prenatal care of the mother. This we have attempted in a small way this year, and next year intend to give a generous portion of our time to reducing these unbelievable figures.

Tuberculosis is a problem. We have been in touch with twenty-three cases during the year, six of whom are in sanitoria at the present time. It does not seem an easy task to get in contact with cases in the early stages. Every community has its tuberculous suspects, and we may well expect that this group and incipient cases exceed in number the active cases. A great deal might be done when people realize that their return to health is a matter of concern and interest to health organizations doing their bit in that direction.

The local Red Cross Society has co-operated with our department in many activities throughout the year, thus carrying out their peace-time policy of "Improvement of health, prevention of disease, and mitigation of suffering." Through the stress of times and circumstances all last winter the Red Cross supplied in homes where there was illness and distress, bedding, linen, pneumonia jackets, and nourishment such as soups, custards and eggs. No one can estimate the value of this, coming as it did in need and sickness. Added to this was the equipment for a baby Clinic among the non-English speaking population. By the magnificent generosity of the President of the Society, the position of an Assistant Public Health Nurse was made possible, thus extending our activities along prenatal and bedside care, and thus carrying out the policy of the Red Cross organization.

3,203 visits have been made during the year. This includes calls for all branches of public health work. Bedside care has been given all cases referred to us in this municipality by physicians, by families, or when we have seen the necessity in the home. This practical daily demonstration is of educational value to members of the household. This indicates what vocational training will do for home makers.

Respectfully submitted,

B. E. Harris, *R.N.*
Public Health ***Nurse.***

OTTAWA

Chairman and Members, Board of Health, Ottawa.

GENTLEMEN.—I have the honour to present the following report of the work of the Health Department for the year 1921:—

POPULATION, (Assessor's Census)	**113,000.**	
BIRTHS REGISTERED	**3,317.**	
Still Births	**161.**	
Live Births	**3,156.**	
Birth Rate	**29.35**	
LIVE BIRTH RATE	**27.93**	
DEATHS REGISTERED	**1,775.**	
Deaths excluding Still Births	**1,614.**	**(in 1920)**
CORRECTED DEATH RATE, excluding 211 non-city cases	**12.416**	**(14.96)**
Gross Death Rate	**15.70**	**(18.92)**
Death Rate excluding Still Births	**14.28**	**(17.64)**
Infant Deaths under 1 Year	**439.**	
Infant Deaths under 6 months	**328.**	
INFANT DEATH RATE, per 1000 Live Births	**139.10**	

COMMUNICABLE DISEASES.

Small-pox, has been the outstanding feature in connection with contagious disease during the past year. The epidemic, which started in October 1920, spread rapidly through the unvaccinated population, increasing throughout November and December and reaching its maximum about the first week of January 1921. The number of cases remained high during February and March, began to decrease in April and May, showed a marked decline in June, and by August Small-pox had ceased to be epidemic although a few cases were still reported.

At first an attempt was made to hospitalize all cases but the Hopewell Hospital on Porter's Island was soon filled to its capacity and the Board of Health wisely refused to attempt earing for patients in tents or temporary shacks in the middle of winter. It was therefore necessary to quarantine a certain number of the cases at home and reserve the hospital accommodation for the more serious cases and for those cases whose removal to hospital would obviate or shorten the quarantine of a house. Altogether 1352 cases were reported during the year, of which number 949 were treated in the Hopewell Hospital. The maximum number of patients in the Hospital on any day was 84 and the minimum one. The total number of nursing days was 13,503. The average stay per patient was 14.2 days. The cost per day per patient was $1.76. As this is the first time that the Hopewell Hospital has been called upon to meet the requirments of an extensive epidemic it may be well to mention that it proved to be a very satisfactory building, easy to heat, economical to operate, and adequate for the accommodation of 60 patients. It was for a time during the epidemic distinctly over-crowded in our attempt to hospitalize all cases. As soon as it was realized that all cases could not be hospitalized the number of inmates was limited to the capacity of the Hospital without overcrowding. One defect in the Hospital is the very limited accommodation for nurses and help.

The majority of cases during the epidemic were of a mild character ,some being so slight as to be difficult of diagnosis, but there was also a considerable number of semi-confluent and a few definitely confluent cases, while two of the four fatal cases were hæmorrhagic.

Out of 587 consecutive cases admitted to the Hopewell Hospital during this epidemic and of which the vaccinations were noted, only nineteen showed marks of previous successful vaccinations. The length of time that had elapsed between the vaccinations and the attacks of small-pox was as follows:—

Less than 10 years	0
10-15 years	3
15-20 years	3
20-25 years	4
25-30 years	3
Over 30 years	6

These cases can be fairly taken as representative of the whole epidemic and it is evident that only 3.23% of the cases of small-pox showed evidence of previous vaccination and none within 10 years.

Three cases of second attacks of small-pox were noted, two of these showing definite pitting from the first attack. These two had suffered from the first attack in youth, more than 30 years ago. The other case had a physician's certificate to the effect that the patient had suffered from Small-pox 5 years previously but the patient showed no evidence of a previous attack.

During the epidemic the City made provision for free vaccination of any who desired to avail themselves of the opportunity. Ten physicians in different parts of the City were employed as public vaccinators. More than 20,000 vaccine points were issued by the Health Department during the year and several thousand during the latter part of the proceeding year at the outbreak of the epidemic. The vaccine used was that supplied by the Provincial Board of Health. This proved very satisfactory, showing about 90% of successful takes and no serious results were reported. Unfortunately, owing to the agitation against vaccination and the impossibility of getting a compulsory vaccination order passed, there still remains a large unvaccinated population in the City even after 14 months of Small-pox, and it is improbable that the City will be free from the disease for a considerable time.

Measles has been almost absent throughout the year, only 82 cases and no deaths having been reported.

Whooping Cough. This disease has been more prevalent than last year but apparently much less fatal, causing only 14 deaths out of 390 cases as compared with 33 deaths in 297 cases during 1920. The large number of cases of pertussis reported during the last two year as compared with previous years is undoubtedly the result of the activities of the district nurses since the majority of these cases are not seen by a physician.

Tuberculosis again shows a decrease as demonstrated in attached statistics.

TUBERCULOSIS 1921.

Month	Cases Reported	Deaths from Pulmonary Tuberculosis	Deaths from Other Forms of Tuberculosis
November	12	7	1
December	10	5	2
January	5	5	2
February	12	7	1
March	9	10	3
April	14	5	3
May	10	7	1
June	4	3	3
July	12	12	1
August	8	10	7
September	11	9	1
October	8	4	0
Totals	115	84	25

This shows a decrease from the preceding year both in the number of cases of Tuberculosis reported and in the number of deaths. The death rate for Tuberculosis, all forms, is 9.64 per 10,000 population as compared with a rate of 10.29 for 1920, which was the lowest rate previously recorded for Ottawa.

Tuberculosis caused this year 6.75% of the total deaths.

Scarlet Fever has been less prevalent than last year, 308 cases with 9 deaths having been reported as against 546 with 17 deaths the year before. 89% of the reported cases were treated in the Isolation Hospital.

Diphtheria again shows an increase, 580 cases reported compared with 522 the year before. The mortality, however, has been somewhat lower, 43 deaths compared with 52 in 1920; a mortality of 7.4% instead of 10% as in 1920. Futher information on Diphtheria and Scarlet Fever will be found in the report of the Superintendent of the Isolation Hospital.

Typhoid Fever has been almost absent from the City—only three cases originating in Ottawa having been reported, although a number from outside municipalities have been treated in the Hospitals of this City.

TYPHOID FEVER

Origin	Cases Reported	Deaths
Ottawa	3	2
Northern Ontario	5	3
Other points in Ontario	14	1
Province of Quebec	6	2
Totals	28	8

Influenza, Cerebro-Spinal Meningitis, Poliomyelitis, and Lethargic Encephalitis have been practically absent, although 6 cases of the last named with no deaths were reported.

Venereal Disease has been better reported this year, a total of 276 being registered as compared with 167 last year. It is not probable that this means any marked increase in the prevalence of these diseases but merely a somewhat better report. There is no doubt that 276 does not by any means indicate the number of such cases in the City.

A free Clinic for the treatment of Venereal Disease has been established at Water Street Hospital under arrangements with the Provincial Board of Health. The Clinic opened June 20th, 1921, with Dr. DeHaitre as the specialist in charge and one nurse supplied by the City. This Clinic has proved a great advantage to the City as it permits those unable to pay for private treatment to obtain the services of a specialist and expensive drugs without charge.

INFANT MORTALITY.

This year has been marked by a substantial reduction in infant deaths so that, even with the diminished number of births, the Infant Mortality Rate has fallen from 162 to 139.1 per 1000 live births.

In 1920 there were 573 deaths of infants under 1 year of age whereas in 1921 there were 439, a saving of 134 lives. If the deaths of non-City cases were excluded the corrected Infant Mortality Rate would be 121.0.

The principal causes of infant mortality are shown in the following table:—

Disease	Under 6 Months	6 Months to 1 Year	Total
Congenital Debility	42	4	46
Prematurity	70	1	71
Marasmus and Inanition	32	3	35
Congenital Malformation	29	4	33
Other diseases of early infancy	20	6	26
Diarrhoea and Enteritis	65	38	103
Respiratory Diseases	28	21	49
Contagious Diseases	13	11	24

These figures show that 40% of the deaths were those of non-viable infants—the majority of these surviving only a few days or hours.

There is, however, an increase in the percentage of deaths from diarrhoeal disease which this year caused one quarter of all the deaths under one year of age. 70% of these occurred during the months of July, August and September.

The deaths from contagious disease among infants show a great reduction owing to the absence of measles and the lessened virulence of whooping cough.

I believe that the increased number of district nurses and the increasing attendance at the Baby Welfare Stations have had some affect in making the 1921 Infant Death Rate the lowest yet recorded for Ottawa.

I wish to repeat three recommendations made in my last annual report and which, while approved by the Board of Health, were not acted on for financial reasons.

1. The appointment of physicians as part-time medical inspectors of schools.
2. The establishment of a School Dental Clinic.
3. The provision of accommodation for incurable cases of cancer.

I wish to thank the members of the Board of Health for their co-operation throughout the year.

Tables of vital statistics and the reports of the different sub-departments are appended.

All of which is respectfully submitted.

Medical Officer of Health.
T. A. Lomer

COMMUNICABLE DISEASES REPORTED FOR 1921

Diseases	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug.	Sept	Oct	Totals	D'hs
Tuberculosis, (Pulmonary)	12	10	5	12	9	14	10	4	12	8	11	8	115	84
Typhoid Fever	6	4	....	....	....	3	....	1	1	5	5	3	28	8
Scarlet Fever	22	37	34	31	35	25	19	17	5	6	34	43	308	9
Diphtheria	90	45	64	63	49	32	31	17	23	19	70	77	580	43
Smallpox	168	203	310	174	185	120	89	42	25	6	24	7	1,352	4
Measles	7	11	19	18	20	2	2	2	....	....	....	1	82	0
German Measles	1	....	....	1	2	....	....	1	....	....	....	1	6	0
Chickenpox	19	31	45	43	14	20	29	63	15	9	2	9	299	1
Mumps	7	2	5	5	10	5	4	5	....	....	4	34	81	0
Whooping Cough	7	34	45	35	28	27	43	41	49	42	26	13	390	14
Erysipelas	....	1	....	1	4	....	1	....	....	....	....	....	7	3
Cerebro-spinal Meningitis	....	....	1	....	....	....	....	....	....	....	....	....	5	1
Influenza	....	....	1	....	....	....	....	....	....	....	....	....	1	5
Lethargica Encephalitis	....	....	1	2	2	....	....	....	....	....	1	....	6	....
Total	339	378	430	385	358	248	228	193	130	94	177	196	3,256	172

BIRTHS BY WARDS, INCLUDING STILL BIRTHS

Diseases	Nov	Dec	Jan	Feb	Mar	Apr.	May	Jun	July	Aug	Sept	Oct	Total
Rideau	7	10	9	9	7	5	5	5	8	5	11	9	90
Ottawa	10	12	20	20	17	18	20	26	21	20	22	24	230
By	19	21	20	20	18	21	15	22	18	18	27	26	245
St. George	33	20	23	31	33	29	25	41	25	25	36	20	341
Central	34	20	23	24	43	26	21	20	23	20	30	24	308
Wellington	28	11	23	20	15	25	45	36	20	18	15	25	281
Dalhousie	79	56	108	77	86	84	70	69	86	75	85	68	943
Capital	28	25	28	40	25	24	44	27	25	24	21	25	336
Victoria	25	17	15	9	22	23	31	35	23	16	9	17	242
Outside Cases	23	26	16	24	29	33	18	31	21	26	23	31	301
Total	286	218	285	274	295	288	294	312	270	247	279	269	3,317

DEATHS ACCORDING TO AGES

Ages	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug.	Sep	Oct	Totals
Under 6 months	31	25	20	29	31	34	22	11	30	42	28	25	328
6 mos. to 1 year	6	8	9	7	13	6	7	7	11	20	10	7	111
1-2 years	3	3	2	4	5	5	3	4	3	6	3	5	46
2-5 years	2	1	6	5	4	3	3	3	1	3	9	2	42
5-10 years	4	6	6	7	4	4	9	3	9	7	6	3	68
10-15 years	2	1	1	3	1	1	3	5	1	4	3	3	28
15-20 years	3	2	2	2	7	2	3	2	4	6	4	2	39
20-25 years	2	4	4	4	4	6	6	4	6	4	1	4	49
25-30 years	2	3	6	4	2	5	1	2	2	4	8	....	39
30-35 years	6	5	4	5	5	....	6	5	2	4	8	1	52
35-40 yeəars	6	4	8	3	5	4	4	4	4	6	4	2	54
40-45 years	1	4	10	1	3	5	3	1	7	4	9	4	52
45-50 years	8	5	6	8	6	8	2	3	5	3	9	6	69
50-55 vears	3	7	5	7	3	7	6	3	6	6	10	6	69
55-60 years	7	9	5	6	10	9	8	3	7	9	7	8	83
60-65 years	9	10	7	8	13	8	7	10	8	4	6	7	97
65-70 years	11	8	11	12	7	7	11	3	2	5	3	3	88
70-75 years	7	9	12	9	15	6	8	6	7	10	9	9	107
07-80 years	4	11	11	5	7	6	9	4	6	4	2	3	72
85-90 years	6	9	7	7	4	2	6	6	8	10	7	10	92
90 years and up	2	3	2	3	2	2	1	....	....	3	5	1	24
Totals	125	137	144	139	161	130	128	95	129	164	151	111	1,614
Stillborns	16	7	12	16	13	17	17	15	10	10	15	12	161
Totals	141	144	156	155	174	147	146	110	139	174	166	123	1.775

DEATHS, INCLUDING STILLBIRTHS, ACCORDING TO NATIONALITY
NOV. 1, 1920—OCT. 31, 1921.

Canadian	1579
English	66
Irish	51
Scotch	24
German	8
Austrian	1
American	23
French	3
Russian	6
Italian	7
Other Nationalities	7
Total	1775

DEATHS AT INSTITUTIONS FROM NOV. 1, 1920, TO OCT. 31, 1921.

Institutions	Total Deaths	Deaths of Non-residents
D. D. G. P. Hospital	106	54
St. Luke's Hospital	74	13
Water St. Hospital	216	104
Misericordia Hospital	82	17
Dr. Hagar's Hospital	9	1
Ottawa Maternity Hospital	21	3
Salvation Army Rescue Home	3	0
Hopewell Hospital	4	2
Isolation Hospital	49	3
Lady Grey Hospital	32	3
St. Patrick's Home	12	4
St. Charles' Home	27	7
Old Men's Home	2	0
Perley Home	6	0
Protestant Infants' Home	5	0
Total	648	211

VITAL STATISTICS FROM NOVEMBER

Disease	1920		1921												
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Under 6 mos.	6 mos. to 1 yr.	1-2
1. Typhoid Fever	2	1	1				1		1		2				
5. Smallpox		1	1	1			1						1		
7. Scarlet Fever		3	1	1	2		1				1		1	1	1
8. Whooping Cough		1	2	1	1	3		2	2		1	1	3	6	4
9. Diphtheria	5	3	4	7	4	4	3			4	5	4	1	3	5
10. Influenza				1			2					2			
14. Dysentery											2	2	2		
18. Erysipelas					1	1		1					2		
19. Other epidemic diseases												1			
Chickenpox												1		1	
20. Septicaemia		1	5	2	1	3	1	3	1	2	2		3		1
22. Anthrax							1								
24. Tetanus					2					1	1				
28. Tuberculosis of the lungs	7	5	5	7	10	5	7	3	12	10	9	4		1	
29. Acute Miliary Tuberculosis							1								
30. Tuberculosis Meningitis			1	1	3	1		1	1	4	1			1	2
31. Abdominal Tuberculosis	1	1				1		2		2					
32. Potts disease		1													
34. Tuberculosis of other organs			1			1								1	
35. Disseminated Tuberculosis										1					
36. Rickets				1					1				1	1	
37. Syphilis	1	1	1	1	1	1	2	2	1		2	1	8	2	2
39. Cancer of the buccal cavity	2	1	1				1								
40. Cancer of stomach and liver	2	1	1	1	3	2		2	3	1	3	4			
Cancer of the bladder		1	3	1											
41. Cancer of the Peritoneum., intestines, rectum	1	2		2	1		3	1		4	2	2			
42. Cancer of the female genital organs	1			1	2	2		1	1	2					
Cancer of Uterus				1							1				
43. Cancer of the Breast		1		1	1						1	2			
44. Cancer of the Skin	1		1		1						1				
45. Cancer of other or unspecified organs		1	5		1	2	1		4		2	2			1
46. Other tumors, (female genital organs excepted)	2				1	1				1	1				1
47. Acute articular rheumatism			1						1		1				
48. Chronic rheumatism and gout				1		1		1	2						
50. Diabetes	2	3		1		3	2				2				
51. Exophthalmic goitre					1	1	1					2			
53. Leukaemia											2				
54. Pernicious Anaemia	1	2	1	1	3	2	3	1		4	1	2		1	
55. Other general diseases						1							1		
56. Chronic or acute alcoholism	1	1			1	1									
58. Other chronic poisonings				1											
2. DISEASES OF THE NERVOUS SYSTEM															
60. Encephalitis			1		1					1		1		1	
61. Meningitis		1	1	2					1	1					1
Cerebrospinal fever or Epidemic meningitis											1				
Simple meningitis		1	1	1	3	1	1						1	1	1
63. Other diseases of the spinal cord		2				1						1			
Paralysis agitans				2			1								
Primary lateral sclerosis of spinal cord	1														
64. Cerebral haemorrhage, apoplexy	6	5	8	6	9	5	6	6	3	4	5	5			

1, 1920 to OCTOBER 31, 1921

2-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-90	90 up	Totals
				3	1	1	1	2										8
				1						1						1		4
1	3			1	1													9
1																		14
11	18	2	3															43
	1									1			2			1		5
														1			1	4
1																		3
1																		1
																		11
	2	1		1	1	3	2	1	1	1		2	1	1				21
											1							4
1				1		1							1					4
	2	2	11	12	12	9	11	4	9	3	1	5	1		1			81
		1																3
3	2			2	2					1								17
			1	1	1		2		1	1								1
1																		2
1																		1
				1														2
																		4
1												1						15
									1		1		2		1			3
							1	1	3	4	2	4		4	2	2		25
									2			2	1					
			1				1	3			3	2	3	2	1	2		18
			1			1	1		1		2	2			1	1		10
											1	1						2
						1		1	1	1	1	1						6
											1	1		1			1	4
								1	2	3		5	3	1		2		18
			1			1	2				1							6
		1		1						1								3
							1	1						1	2			5
	1					1	1		1	2	2	3	2					13
		1		1		1			1					1				5
							1		1									2
	1								1	4	1	6	2	5				2
																		1
					1	1		1		1								11
													1					4
			2								1							4
		1	1	1		1		1										6
1																		1
2	1				1	1												8
						1			1			1				1		4
									1	1					1			3
								1										1
									3	2	6	6	7	17	11	15	1	68

VITAL STATISTICS FROM NOVEMBER

Disease	1920		1921												
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Under 6 mos.	6 mos. to 1 yr.	1-2
65. Softening of Brain			1												
66. Paralysis without specified cause					1		2				1				
67. General paralysis of the insane	1			1											
69. Epilepsy	2														
70. Convulsions (nonpuerperal)			1												
71. Convulsions of Infants		4	1		3	3			1	2			7	4	3
73. Neuralgia and Neuritis				1											
74. Other diseases of the nervous system					1										
76. Diseases of Ears						1	3							1	
3 DISEASES OF THE CIRCULATORY SYSTEM															
78. Acute Endocarditis		3		3	2	1	2	1	2						
79. Other organic diseases of the heart	3	1	4	2		3	2	4	1	2	2	1	1		
Chronic valvular disease	1		1			1	1	3	4	3	1				
Aortic insufficiency						1									
Chronic Endocarditis	1		3	5	5	2		4	1	4	4	5			
Myocarditis	3	8	7	7	7	3	5	2	4	4	3	6			
80. Angina pectoris							1			1	1				
81. Diseases of the arteries	3	1	3	2	3	1	1	2	2	1		1			
Arterio Sclerosis	4	2		2	4	2	1	2	2		3	3			
82. Embolism and thrombosis			2	1	1				1	1	1	1			
83. Diseases of the veins						1									
85. Haemorrhage, other diseases										1					
4 DISEASES OF THE RESPIRATORY SYSTEM															
87. Diseases of the larynx		1		1									2		
89. Acute Bronchitis					3							2	1	2	
90. Chronic Bronchitis			1		1	1			1			1			
91. Broncho-pneumonia	4	3	5	4	7	2	4	2		2	4	4	10	13	4
92. Pneumonia	5	11	9	5	9	9	8	8		2	1	7	12	6	2
93. Pleurisy		1	1					1	2						
94. Pulmonary Congestion				1					1	1	1	1	2		
95. Gangrene or abscess of lung			1								1				
96. Asthma	1		1							1					
98. Other diseases of the Respiratory system	1				1		1	1	1				1		1
5 DISEASES OF THE DIGESTIVE SYSTEM															
100. Diseases of the Pharynx			1	1	1									1	1
102. Ulcer of the stomach			1	1	1	1	1								
103. Other diseases of the stomach	2	2		4	3	3			1	1	2		2		1
104. Diarrhoea and enteritis, under 2 years	6	6	2	5	2	4	4	1	15	36	19	7	65	38	4
105. Diarrhoea and enteritis		1		1	1				2	2	2				
107. Intestinal parasites											1				
108. Appendicitis and typhlitis	6	3	2	5	1	3	4	6	6	5	2				1
109. Hernia, intestinal obstruction	2		1	2				1	3	1		2		2	
Volvulus of the bowels				1				1	1						
110. Other diseases of the intestines					1			1						1	
111. Acute yellow atrophy of the liver		1								1					

1st., 1920 TO OCTOBER 31st., 1921

2-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-90	90 up	Totals
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
...	...	...	...	...	...	...	...	1	...	...	1	...	...	1	1	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	2
...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4
...	3	2	1	3	...	1	...	...	...	1	1	...	...	1	1	...	...	14
...	2	1	1	...	...	...	...	2	1	1	2	5	1	4	3	1	...	25
...	...	...	...	...	...	1	...	...	1	2	2	2	1	4	...	2	...	15
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	2	1	...	1	2	1	1	2	2	...	2	6	4	5	2	2	1	34
1	...	1	1	1	...	2	1	...	3	5	4	5	8	8	9	9	1	59
...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	3
...	...	...	...	...	...	...	...	...	...	1	...	1	4	4	4	5	1	20
...	...	...	...	...	...	...	...	1	...	...	3	2	3	6	6	3	1	25
...	...	...	...	...	...	...	1	3	...	1	...	...	1	1	1	...	...	8
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	5
...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	1	1	...	5
1	1	...	...	...	...	...	...	1	...	...	1	...	2	3	...	1	4	41
...	...	1	1	2	3	6	5	3	8	3	7	5	3	3	1	3	...	74
...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	2	...	5
...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...	5
...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2
...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	3
...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	5
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	...	1	...	...	...	...	1	1	...	1	1	...	...	...	...	5
...	...	1	...	...	...	1	...	1	1	1	1	1	2	2	2	2	...	18
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	107
1	2	1	...	...	...	...	...	...	1	...	1	1	...	...	...	1	1	9
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1	10	3	3	4	3	3	3	1	1	1	6	1	...	...	1	1	...	43
2	...	...	...	1	...	...	...	...	3	...	1	1	...	...	1	1	...	12
1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	3
...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	2

VITAL STATISTICS FROM NOVEMBER

Disease	1920		1921												
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Under 6 mos.	6 mos. to 1 yr.	1-2
113. Cirrhosis of the liver	1	...	2	1	2	...	1	1	1	...	...	...	1	...	...
114. Biliary calculi	1	...	...	...	1	...	1	1	1	...	1	1	...	...	...
115. Other diseases of the liver	1	...	1	...	...	...	4	...	...	...	...	...	...	...	...
117. Simple peritonitis, (nonpuerperal)	1	1	5	1	1	...	2	1	...	...	2	...	...	...	...
118. Other diseases of the digestive system	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
6. Diseases of the Genito-Urinary System															
119. Acute Nephritis	1	2	1	3	3	1	2	...	1	3	1	1	3	2	...
120. Bright's Disease	4	5	7	3	8	3	5	1	5	6	5	6	...	...	...
122. Other diseases of the kidneys and annexa	...	...	1	1	...	...	...	...	...	...	1	1	...	...	...
123. Calculi of the urinary passage	...	...	...	...	1	...	...	1	...	...	1	...	...	...	...
124. Diseases of the bladder	...	2	...	...	1	...	...	1	1	2	3	...	...	...	...
125. Diseases of the urethra, urinary abscess, etc.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
126. Diseases of the prostate	1	4	1	...	1	2	2	1	2	1	...	4	...	...	...
128. Uterine Haemorrhage, (nonpuerperal)	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
129. Uterine tumor, (noncancerous)	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...
130. Other diseases of the uterus	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
131. Cysts and other tumors of ovary	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
132. Salpingitis and other diseases of ovary	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
7. The Puerperal State															
134. Accidents of pregnancy	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...
135. Puerperal Haemorrhage	...	1	...	...	...	...	1	...	1	...	1	...	...	...	...
137. Puerperal Septicaemia	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
138. Puerperal Albuminuria and convulsions	1	...	...	...	...	1	1	...	...	1	...	...	...	...	...
139. Puerperal phlegmasia, alba-dolens, embolus, sudden death	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
8. Diseases of the Skin, etc.															
142. Gangrene	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
144. Acute Abscess	...	...	1	...	...	1	...	...	...	...	1	...	...	2	...
145. Other diseases of the skin and annexa	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...
Diseases of the Bones, etc.															
146. Diseases of the Bones															
Osteomyelitis	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
Mastoiditis	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
168. Amputations	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
10. Malformations															
150. Congenital malformations	1	1	1	2	3	4	4	1	2	...	...	3	18	4	...
Congenital hydrocephalus	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
Congenital malformation of heart	1	1	1	...	1	...	...	...	...	1	...	...	5	...	...

1st., 1920 to OCTOBER 31st., 1921

2-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-90	90 up	Totals
											4	2	2					9
						1	1			2	3							7
							1				1	1		2		1		6
2	4	2	1		2	2		1										14
				1														1
1	1	1				3		2	2	1	2					1		19
	1		1	1	1		2	5	5	5	3	7	12	7	5	2	1	58
				1		1		2										4
									1	1	1							3
		1							2		2	1	2		1	1		10
													1					1
										1	1	3	2	6	3	2	1	19
							1											1
					1					1		1						3
											1							1
										1								1
								1										1
					1			1										2
					1			2	1									4
					1									1				2
		1	1	2														4
							2											2
															1			1
	1																	3
																1		2
1					1													2
	1																	1
						1												1
																		22
																		1
																		5

VITAL STATISTICS FROM NOVEMBER

Disease	1920		1921												
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Under 6mos.	6 mos. to 1 yr.	1-2
Spina Bifida	1	...	...	1	...	3	...	...	...	...	...	...	5	...	...
11 DISEASES OF EARLY INFANCY															
151. Congenital debility	8	3	4	9	2	...	4	...	3	4	7	2	42	4	...
Premature Birth	8	3	8	6	9	5	4	4	9	6	6	3	70	1	...
Marasmus	3	...	2	...	...	5	...	...	2	10	3	6	25	3	2
Inanition, etc	...	...	...	...	...	1	2	1	1	1	1	...	7	...	...
152. Other diseases peculiar to early infancy	1	4	1	2	2	1	...	1	1	2	...	1	9	6	1
Haemorrhagica	...	1	...	1	...	1	...	2	...	...	...	...	5	...	...
Difficult Delivery	...	2	1	...	...	...	...	...	...	...	...	...	3	...	...
Atelectasis	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Injury by forceps at birth, etc	...	...	...	...	1	...	...	...	...	...	...	1	2	...	...
12 OLD AGE															
154. Senility	2	8	4	4	7	4	3	2	1	3	2	1	...	...	...
13 AFFECTIONS PRODUCED BY EXTERNAL CAUSES															
155. Suicide by poison	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
159. Suicide by firearms	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
160. Suicide by cutting or piercing instruments	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
165. Other acute poisonings	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
167. Burns	2	2	1	...	...	1	3	...	...	...	3	...	...	...	1
168. Suffocation	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
169. Accidental drowning	...	...	...	...	1	1	2	3	4	1	1	2	...	...	1
170. Traumatism by firearms	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
171. Traumatism by cutting or piercing instruments	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...
172. Traumatism by fall	1	...	...	...	1	...	2	...	2	...	...	...	...	...	...
174. Traumatism by machine	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
175. Traumatism by other crushings	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Railway crushings	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...
Struck by street car	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Automobile accident	...	...	...	...	...	...	2	2	...	1	1	...	...	...	1
179. Excessive heat, sunstroke	...	...	...	...	...	...	...	...	4	...	...	...	1	1	2
185. Fractures, cause not specified	...	1	...	1	1	1	...	...	...	1	4	...	...	...	...
186. Other external causes	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
14. ILL-DEFINED DISEASES															
187. Ill-defined organic diseases	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
188. Sudden death	1	1	1	1	1	2	1	2	...	3	2	...	1	...	...
189. Cause not specified	2	...	1	...	...	2	1	3	1	...	1	...	1	...	1
Cause not known	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	125	137	144	139	161	130	128	95	129	164	151	111	328	111	46..
Stillbirths	16	7	12	16	13	17	18	15	10	10	15	12	...	...	...
Totals	141	144	156	155	174	147	146	110	139	174	166	123	...	...	...

1st., 1920 to OCTOBER 31st., 1921

2-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-90	90 up	Totals
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	46
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	71
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OWEN SOUND

ANNUAL REPORT OF MEDICAL OFFICER OF HEALTH, 1921.

Local Board of Health,
City.

Gentlemen:—

I beg to submit my annual report for the year 1921. Appended also are reports of Miss Kirkwood, Public Health Nurse,
Miss Stewart, School Nurse,
Dr. Norton, Veterinary Inspector.

The year just closed has been marked by the unusual number of cases of infectious disease. Diphtheria and small-pox have been prevalent, particularly during the latter part of the year. The cause of this prevalence is hard to ascertain, and has been general over nearly all the American continent. Locally, I am certain the cause is threefold.

Firstly:—The absence of Isolation Hospital facilities.

Secondly:—The extremely mild nature of the diseases, in many cases frequently overlooked, and I regret to say frequently hidden by the public.

Thirdly:—A weakening of the public conscience in the matter of obeying the restrictions imposed. This last is, I feel sure, the cause of many cases of disease and is due to a variety of causes, but is recognized by authorities all over Europe and America since the war. In the disease known as small-pox, the remedy lies in the hands of the citizens of the city. Vaccination will stamp out the disease entirely and nothing else will do so. Just so long as the public takes its advice in Public Health matters from charlatans and faddists, instead of from authorities on the matters involved, just so long will small-pox exist.

In reference to Diphtheria, the value of this advice is obvious. The same people who oppose vaccination oppose the anti-toxin treatment of Diphtheria, yet by the use of this remedy the death rate for all cases of diphtheria in the City was only about 2%. Those who have lived long enough to remember the 25 to 40% death rate of diphtheria in old days before anti-toxin was used won't need further argument.

Milk:—The quality of the milk supplied during the year has been excellent. Examination of samples taken regularly throughout the year has been continued and the improvement over previous years has been striking. Both as regards quality and cleanliness, the results are gratifying.

The report of the Veterinary Inspector, Dr. Norton, reflects this improvement, and the dairy farms from which the milk comes continue to advance along lines of cleanliness and sanitation.

Water:—The quality of the city's water supply is excellent. Samples are constantly being taken by Mr. Pratt, and recent reports are the best for years. A great deal of complaint was received, during the summer from residents on the West side about the water supplied; it was warm and discolored but not infected. The exact nature of this disturbance was not discovered although a variety of reasons were advanced. Water analysis was also continued where ice cutting was done; under no circumstances can ice be cut until permission is given by your officers.

In the matter of general Public Health improvement; the year will stand out as marking the greatest advance since I became Health Officer. This is due to, 1st, the establishment of a Laboratory here by the Provincial Board of Health.

2nd, the opening of a Baby Clinic, and 3rd, securing the services of a Public Health Nurse. I need not discuss the value of the Laboratory, the service it will gives is obvious, and the dividends it will pay are incalculable. Dr. Murry Fraser has been appointed Director, his salary paid by the Provincial Board, and under his direction the Laboratory will do, in fact is already doing excellent work.

The work of the *Baby Welfare Clinic* is proving a great success. Much credit is due Miss Kirkwood for her unwearying work, and the best thanks of the City is due Dr. Rutherford and Gaviller for their services in this connection. No salary is paid either of them, but it is hoped that the experience derived from the work done at the Clinic will be of value to them in their work, as its value will be proved in the improved general health of the children in the city. Owen Sound is fortunate in securing the services of a Public Health Nurse.

During the period covered by this report large numbers of complaints of various kinds were investigated by the Sanitary Inspector and remedied. In this connection I wish to express warm appreciation of the services of Mr. Brett, Sanitary Inspector.

The attention of the Board is called to the report of Miss Kirkwood in the Venereal Disease Clinic. Education of the Public in this matter is urgently needed if progress is to be made. The prevalence of these diseases, their serious nature, the variety of the methods of contagion; mark them as one of the most pressing problems of Public Health. All of which is respectfully submitted.

H. G. Murray

Dr. R. J. Norton's Report.

Dr. H. G. Murray, M.O.H.
Owen Sound, Ont.

Dear Sir:—

Permit me to submit first report in 1922 re the Dairies.

I have visited forty-eight places, some of them the second time, and inspected three hundred and ninety-one cows. Out of this number I rejected only one, it having an actinomycotic lump in the throat. Most of the cows were in very good condition, and a good many of the premises are in excellent condition. Others are gradually improving, only a few I found unsatisfactory, which I have already reported to you.

Respectfully yours,
R. J. Norton.

CHILD WELFARE CLINIC.

First Child Welfare Clinic was held under the capable supervision of Miss Castle, P.P.H.N. on April 14, 1921.

11 Clinics have been held including one in Alexandria School.

Children registered	307
Total attendance	628
Children examined	225
Referred to family physician	44
Advised as to proper feeding	92

The greatest part of Demonstration outfit including a splendid set of Clinical scales was donated by the Patriotic League. Other necessary supplies have been provided by the Red Cross Society.

The King's Daughters provided and made proper Layette for infants.

Miss Evelyn Smith Presented to the Clinic a Baby's toilet basket.

The ladies of the city have given of their time in assisting with the babies and providing and serving refreshments to the mothers. For this the McQuaker Co. have kindly provided cream each week.

To all of those mentioned and to numbers of others who helped I wish to express my warm appreciation and thanks.

PUBLIC HEALTH AND CHILD WELFARE VISITS.

Home visits in connection with Fresh Air Fund	59	
Diphtheria visits	77	
Home visits, Child Welfare	1010	
		1,146
Infant Welfare Visits	806	
Pre-school "	1131	
Total		1,937
Pre-natal visits	33	
Total number patients registered at Clinic 41 male & 12 female	53	
Number of Clinics held	122	
Total number of treatments given	651	
Average daily attendance for the period	6	
Completely cured and discharged or examined and found cured non-infectious	20	
Visited Venereal Disease cases	27	

During November and December and since the Clinic has been fully working, the average daily attendance was 11, the total number of treatments during December alone was nearly 200; and it is expected that this rate will be maintained or increased. The value of the work to the community can hardly be overestimated.

Organization visits	102	
Other visits (Business, etc.)	54	
Meetings attended	6	
		162

PEMBROKE.

To the Corporation of the Town of Pembroke.

I beg to submit the report of the Board of Health for the year 1921.

The following communicable diseases have been reported:—

Disease	No. of Cases	No. of Deaths.
Smallpox	49	
Scarlet Fever	12	
Diphtheria	25	
Sleeping Sickness	1	
Mumps	3	
Chickenpox	32	
Mumps	3	
Typhoid	Town 17; Out-of-town 9	
Syphilis	6	
Gonorrhoea	6	

In connection with our small-pox epidemic, our Town is so situated that we are likely to have this disease appearing from time to time, and I trust the Isolation Hospital project will prove a reality in the incoming year.

Specimens of town water have been regularly supplied to the Department of Public Health throughout the year, and the chlorination of our water supply has been regulated according to these reports. In most cases of typhoid that I have personally investigated well water was the most likely source of infection.

The Town pump has been inspected at regular intervals by the Chief, and is reported to be well kept, and as free from objectionable odors as it is possible to keep it.

The public schools of the Town have employed a school nurse for the past year, and so satisfactory have been the services rendered in regard to the early detection of Communicable diseases among the pupils, sanitation, etc., that I would strongly recommend the Separate School Board to do likewise.

Under the auspices of the Local Council of Women the second week of November was set apart for Health instruction. The Provincial Board co-operated in sending Dr. Bell and Nurse Osborne, who contributed largely to the week's success. Dr. Bell, in addition to health clinics, gave a public address on health topics as well as a lecture to the nurses of both hospitals on Prenatal care. The clinics were well attended, and great interest was shown by the mothers. The importance of the early recognition of physical defects and the strong probability of their early correction was forcefully impressed by Dr. Bell. The Local Council of Women should be congratulated on the success of the undertaking. Our V. O. Nurse, Miss Shore, is, of course, continually working along the lines of Child Welfare besides her actual care of the sick, and this branch of her work is of great importance.

The Council is to be commended for providing a special sanitary inspector for a short term and from the satisfactory results obtained I would recommend that the same policy be adopted next year.

Several complaints have been received by the Board re condition of west end slaughter house, and on investigation were found to be justified. Two convictions were registered against the owner on two separate occasions.

Before closing I wish to thank the members of the Board for the interest they have taken in matters pertaining to health, and the assistance and co-operation of the citizens in making our Town a clean and desirable place in which to live.

All of which is respectfully submitted,

(Sgd.) A. J. SPARLING, M.D., *M.O.H.*

PETERBOROUGH BOARD OF HEALTH.

PETERBOROUGH, ONT., Nov. 30, 1921.

To the Chairman and Members of the Board of Health of the City of Peterborough.

Gentlemen:—

I herewith submit my report ending November 20th, 1921:—

One Scarlet Fever with infection of Streptococci, one Scarlet Fever, one Diphtheria unconscious when admitted, one Diphtheria died in 5 days, one Diphtheria with Brights Disease, one Diphtheria with Edema of Lungs, one Diphtheria with chronic diabetes 5 hours after admission, and one Diptheria died 16 hours after admission.

There has been established in connection with this Hospital a training school for nurses who under certain conditions can graduate from same. There are four now in training.

We have not been able to carry out the painting, etc. which your Board recommended on account of the number of patients this Fall.

I would strongly advise sewer connection for this Hospital. Am sorry to report that two nurses contracted contagious diseases, one diphtheria and one Scarlet Fever.

The City Filtration Plant is rapidly nearing completion. Pending this the water has received Chlorination all Summer.

The milk supply of the City is good, and monthly tests show it to be up to Government standard re fats.

The City is now starting the construction of a Sewage Plant of large dimensions which will be of untold advantage.

The Provincial Board of Health this month just completed the establishment of a Branch Laboratory at a very considerable cost. This is a most valuable asset to not only the City but the District. It is in charge of an experienced Director. All kinds of tests can be made with the least possible delay, which is extremely valuable to the public from Health and Diagnostic standpoint.

Many houses have been this year connected with sewers but there are many more yet to be done.

I have the Honour to be Gentlemen

Your Obedient Servant,

(Sgd) T. W. H. YOUNG, *M.O.H.*

The following infectious cases were reported:—

Scarlet Fever	123
Diphtheria	141
Chickenpox	1
Smallpox	8
Measles	3
Typhoid Fever	2
Mumps	1

Number of cases treated in Queen Mary Hospital 209, as follows:—

Diphtheria	83
Scarlet Fever	183
Measles	1
Sleeping Sickness	1
Mumps	1
Deaths in Hospital	7

PORT ARTHUR.

Port Arthur, Ont.
October 31st, 1921.

S. A. Coulter,
Chairman, Board of Health.

Dear Sir:

I beg to submit my Annual Report for the year ending October 31st, 1921.

I am pleased to be able to state that we have had a very successful year. Our Isolation Hospital has been without patients several times during the year, which is gratifying. We made extensive improvements to the Hospital, painting it inside and out at a cost of four hundred and sixty dollars and fifty cents. We also built the veranda, so long promised by different Boards, at a cost of One thousand and fifty-five dollars and fifty cents. These improvements were very badly needed and have made a very decided change on the building. We also purchased a new pump which was necessary as the old one had outlasted its usefulness and had cost a large sum each year in repairs, as well as being very noisy. The new pump has been installed and seems to give entire satisfaction. The supply of water is not what we should like to have, however it supplies the needs of the Hospital for general use. We have to haul water from the city mains for drinking purposes and hope the mains may yet be extended to the Hospital as the present water supply will never give satisfaction. During the year I examined six insane persons in the gaol, for the Police Magistrate. I have been called to the Police Station several times to attend prisoners who were ill or hurt. I have also attended a number of men employed in the Firehalls. I have attended the children in the Shelter, several of whom I had to remove to the general hospitals for treatment. I had a number of patients sent me by the Salvation Army, nine of whom I had removed to the Hospitals. With Dr. Sparks, the District Officer of Health, and Mr. Hayes I visited the dairies last Winter. We found two in a very poor condition, Laurin & Son's and Paquette's, Paquette has good stables and equipment but it was very dirty, Laurin had poor equipment and stable accommodation for the number of cattle he had. Since that time they have made improvements. With Dr. Sparks and an Official from the Provincial Board I paid a visit to the Pumping Station to inspect the chlorination plant. Dr. Sparks and I had made an inspection there before. We found the quantity of chlorine being used was not sufficient to make the water safe for use and had to increase the amount. Sewage sometimes gets into the water, especially when there is a strong south wind to drive the water from the harbour in the direction of the intake. However, since regulating the amount of chlorine we have had no bad reports from the Laboratory in Fort William where we have the water tested regularly.

We have only had one case of typhoid fever reported which is a decided change from our reports of a few years ago.

You will note we had seven cases of tuberculosis reported with thirteen deaths. This is partly accounted for by some of these deaths being reported from outside townships. Also some of the cases may have been reported last year although the patient died this year. I am satisfied though that there is a laxity on the part of the public in reporting these cases, partly accounted for by the fact that the Regulations do not call for quarantine. Our school nurses have done good work and have been kept busy visiting the schools. Every school is visited each week, the name of absent pupils obtained, and the nurse visits the homes to find the cause of the child being absent. By this means we are able to find and check contagious cases which would not otherwise be known. The nurses also make an examination of every child in the schools twice a year for eye, throat and teeth trouble, and they also examine the heads for vermin.

In conjunction with Fort William we established a venereal clinic, which is now doing a most important work. I understand there are at present over sixty patients under treatment. What this means to future generations it is impossible to estimate.

VITAL STATISTICS.

The estimated population of Port Arthur is	**15.629.**
Births. (Males 258. Females 256)	**514.**
Total deaths registered in the city	**255.**
(Deaths in city 228, from outside places 27.)	

Of the deaths reported twenty-four were accidental or violent.

Deaths from drowning	**8.**
" " fracture of the skull	**1.**
" " injury to the chest	**1.**
" " railway accidents	**4.**
" " shooting	**4.**
" " lightning	**1.**
" " killed by an axe	**1.**
" " " by a tree	**1.**
" " " by a horse	**1.**
" " " by an auto	**1.**
" " " by attempted abortion	**1.**

Eighty of the deaths were children under one year of age, and of these eighty, forty-six are given as stillborn or premature. This is a large number of children to die at time of birth and we trust the day may soon come when this great loss may be overcome.

STILLBORN.

1916	39.
1917	53..
1918	39.
1919	47.
1920	62.
1921	46.

CONTAGIOUS CASES REPORTED

	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.
Scarlet Fever	3	4	4	6	4	4	3	1	3	0	2	2
Measles	0	4	5	3	0	0	1	1	1	1	1	0
Chickenpox	2	14	26	3	7	11	4	7	2	0	1	0
Smallpox	0	0	0	0	0	0	1	0	0	0	0	0
Whooping Cough	0	0	2	0	0	0	0	1	1	4	2	6
Typhoid Fever	1	0	0	0	0	0	0	0	0	0	0	0
Diphtheria	0	1	0	2	0	0	1	1	1	0	4	10
Tuberculosis	2	0	0	2	0	0	2	0	0	0	1	0
Mumps	1	1	11	21	15	7	3	3	0	0	0	2
Polio-Myelitis	0	1	0	0	0	0	0	0	3	4	0	0

Total Number of Cases for Year.

	Cases	Deaths
Scarlet Fever	36	0
Measles	17	0
Chickenpox	77	0
Smallpox	1	0
Whooping Cough	16	1
Typhoid Fever	1	1
Diphtheria	20	1
Tuberculosis	7	13
Mumps	64	0
Polio-Myelitis	8	0

Scarlet Fever

Year.	Cases	Deaths
1918	66	3
1919	115	3
1920	101	7
1921	36	0

Diphtheria

1918	16	1
1919	4	1
1920	14	2
1921	20	1

CONTAGIOUS CASES.

MEASLES.

Year	Cases	Deaths
1918	6.	0.
1919	12.	0.
1920	334.	0.
1921	17.	0.

WHOOPING COUGH.

1918	58.	3.
1919	1.	0.
1920	5.	0.
1921	16.	1.

TYPHOID.

1918	5.	1.
1919	4.	0.
1920	3.	1.
1921	1.	1.

POLIO-MYELITIS.

1918	0.	0.
1919	0.	0.
1920	1.	0.
1921	8.	0.

ISOLATION HOSPITAL.

In 1919 we treated 123 Patients in the Hospital.
In 1920 we treated 71
In 1921 we treated 33

Scarlet Fever	13.	Cases
Diphtheria	14.	"
Measles	4.	"
Mumps	1.	"
Chickenpox	1.	"
	33.	

FINANCIAL STATEMENT.

Salaries	$10.295.00
Meal Account at Hospital	666.85
Fuel	426.90
Public Utilities. (Phone, Light, Tickets, Gas, Team)	664.63
Relief	216.50
Wells & Emmerson. (Pump)	203.10
Mahon Electric	56.86
Dominion Plumbing	9,79
Marks Clevet & Dobie Co	191.29
I. L. Matthews Co.	76.14
Drugs and Surgical Supplies	90.94
Special Nurse	132.00
Sundries	192.30
Dr. Coldwell, Vaccinating in 1920	30.00
Dr. Smith, Vaccinating in 1920	30.00
Martin. Painting inside walls at Hospital	200.00
Virge. Painting Hospital & Veranda	260.50
Dunbar. Building Veranda	1,055.50
Total	$14,819.32

CREDITS.

City of Fort William toward Nurse's salary	$350.00	
Collections	392.50	
Sale of stove	20.00	
From Public School Board	350.00	
From Separate School Board	57.50	
	$1,200.00	
Net Total		$13,619.32

I have the honor to be
Sir,
Your obedient Servant,
C. H. Laurie,
Medical Officer of Health.

PORT HOPE

INSPECTION OF SCHOOLS.

The reports upon the inspection of the High and Public schools of the town of Port Hope for the year 1921 have been forwarded to the trustee boards and to the Provincial Board of Health.

The sanitary condition of these schools was found to be quite the same as reported in the year 1920. The most urgent need at the East and West Primary Schools is the installation of proper sanitary closets. It would not be a difficult matter to have this done if sewer accomodation were available. When the Municipal Council decides to extend the sewage system of the town they should keep in mind the condition and need of these schools and endeavor to build sewers that may be made available for the use of the schools.

SLAUGHTER HOUSES.

There are two butchers who make a business of slaughtering animals and selling meat on the market and neither of them have a proper slaughter house. They have been supplied with a copy of the regulations and have promised to construct buildings in accordance with these regulations.

There is still need for improvement in some of the slaughter houses inspected but on the whole there has been a marked and gratifying change for the better. Much credit is due to Mr. George Perrin who has constructed an entirely new building for the slaughtering of animals at Dale. Any one who buys meat from Mr. Perrin can be quite sure of getting meat that is clean and wholesome and that has been produced under the most satisfactory conditions.

INFECTIOUS DISEASE.

For the year ending November 30, 1921, we have been very free of infectious diseases, there being only twenty-one cases notified, viz:—eight of diphtheria, six of typhoid fever, one of tuberculosis, two of scarlet fever and four of chicken-pox. Three of the typhoid cases were from outside municipalities and did not contract the disease in Port Hope. But it is evident the three remaining cases did contract the disease in Port Hope as none of the parties had been out of town ,for some time previous to falling ill. Most probably all became infected some time between the twentieth and the thirtieth day of September.

It is not possible to point out the source of infection with absolute certainty but from the evidence gathered it is most likely that all the parties became infected from the same source.

MILK.

Samples of milk have been taken regularly each month for examination. The average for the year was 3.22 of butter fat.

The premises of all the vendors and also of the dairymen supplying them have been inspected, and in the majority o,f cases were found quite satisfactory.

During the year one large dairy had trouble with roapy milk. This condition is usually caused by different kinds of bacteria which get into the milk after or at the time of milking. Cows that pasture in swampy places are very apt to get the udders and flanks covered with mud. This mud dries on the cow and if the udders are not carefully cleansed the dust is apt to fall into the pails during milking. Or the water used for washing pails and dairy utensils may contain the harmful bacteria and thus infect the milk. The milk assumes a stringy, roapy, slimy or mucilaginous condition a few hours after milking. Roapy milk is, as a rule not injurious to health. The remedy is thorough cleanliness of udder and very careful scalding and cleansing of all dairy utensils. Milk containers should be washed with one pound of chloride of lime in ten gallons of water. Soap, washing soda, scalding water, strong solution of freshly slaked lime are all useful as cleansing and disinfecting agents.

Port Hope Water Supply.

Following is the report of water analysis for each month of the year ending November 30, 1921, viz:—

1920.				
Dec.	Samples taken	5,	number of samples contaminated	2
1921.				
Jan.	" "	6,	" " "	3
Feb.	" "	6,	" " "	2
Mar.	" "	10,	" " "	8
Apl.	" "	8,	" " "	0
May	" "	8,	" " "	0
June	" "	4,	" " "	4
July	" "	8,	" " "	8
Aug.	" "	8,	" " "	4
Sep.	" "	7,	" " "	4
Oct.	" "	7,	" " "	2
Nov.	" "	7.	" " "	0
		84		37

Of the thirty-seven samples contaminated,

4 showed colon bacilli in 1 cubic centimetre of water,
2 " " " " 5 " " " "
23 " " " " 25 " " " "
8 " " " " 50 " " " "

The total number of samples taken was eighty-four, and thirty-seven of these showed contamination with bacteria of intestinal origin, while forty-seven were pure. Some of the samples showed an amount of pollution that is considered dangerous. The pollution is intermittent and one cannot say when it is going to take place or how long the water may be contaminated. Therefore the only safeguard under these circumstances is to see that the filters are working efficiently and to have the water chlorinated continuously.

Chlorination of Water.

When the new filtration system was being considered by the town, Dr. Amyot very strongly emphasized the fact that water taken from the lake should be both filtered and chlorinated. In 1915 when the filtration plant was first put into operation, instructions were given to chlorinate the town water continuously, and since 1915 no change has been made in this order. No instructions have been given that chlorination be discontinued. If one were sure that the filtration plant were doing efficient work it is possible that a time might come when it might be safe to discontinue the chlorination, or when it might be considered sufficient to use only a small percentage of chlorine. Such a time has not arrived. On the other hand, in 1919 something happened to the intake pipe which runs out into the lake about one thousand feet, and which supplies water for the filtration plant. This pipe became blocked with sand for a time, and shut off the supply of the filters. Since this happened, the water has at times been badly polluted, thus showing the great need of continuous chlorination. During the past year it happened that for three months all the samples taken for examination were pure. This was in the months of April, May and November. But the fact that we occasionally find that all the samples examined are free from pollution does not mean that there should be a decrease in the amount of chlorine used. The condition of the water varies from day to day and from hour to hour, and a favorable report from the samples of any single month, considered by themselves, should not be interpreted as indicating that the water is of a uniformly good quality. Hence it might be very misleading to announce to the public that the water samples of any one month had been found of good quality. The quality of the water can only be judged from the examination of quite a number of samples taken over a considerable period of time. And in every case the analysis as found by the examinations made in the laboratory must be considered in connection with the sanitary survey of the water-gatherng area and the epidemiological evidence for the few months past.

SUPPLIES.

The following supplies were obtained for the use of the board and for physicians during the year 1921, viz:—

Eleven dozen nitrate of silver ampules, used for the prevention of baby's sore eyes.

Ten dozen sterilized bottles for forwarding samples of water to the laboratory for analysis.

Enough typhoid and paratyphoid vaccine to immunize ten persons. This vaccine is used as a prophylactic against typhoid fever.

Six smallpox vaccine points.

Two dozen diphtheria swabs used for sending specimens to the laboratory for examination and diagnosis of diphtheria.

Four dozen slides for sending specimens of blood in suspected cases of typhoid fever.

Two dozen slides for sending smears for examination in suspected cases of gonorrhoea.

Two dozen sterilized bottles for forwarding specimens of sputum for examination in suspected cases of tubercuosis.

Nine dozen and a half vials of diphtheria antitoxin used in the treatment of diphtheria and as a prophylactic against the disease.

A sufficient number of ampules of phenarsenamine for the treatment of two persons with syphilis, and also the apparatus used for administering the phenarsenamine.

A number of packages of pertussis vaccine used for the prevention and cure of whooping cough.

Slaughter house regulations for butchers and report cards for making weekly reports of venereal diseases.

PORT HOPE, Dec. 1st, 1921.

GEO. A. DICKINSON, *M.O.H.*

RENFREW.

To the Chairman and Members of Board of Health.

GENTLEMEN:—

I have the honour to submit to you the report on the sanitary conditions of the town, and the Health Department for the year December 1st, 1920—November 30th, 1921. There has been reported during the year the following contagious and infectious diseases.

Diphtheria	33	cases
Smallpox	13	"
Scarlet Fever	4	"
Chicken Pox	7	"
Typhoid	6	"

Numerous cases of mumps and whooping cough. There were two deaths from Diphtheria or its after effects and one from Typhoid Fever: The number of Diphtheria cases was unusually high this year, due no doubt to the fact that the disease was epidemic in the Province: and occurring at the time of the year when it usually reaches its peak, namely November. There were more cases of Diphtheria in Ontario in November and a greater mortality therefrom, than in any year for the past number of years. In this connection I would repeat this word of warning; "The most important single factor responsible for the continuance of Diphtheria deaths is neglect of early treatment: failure in this respect is usually due to delay in calling a physician in cases of sore throat in little children: every sore throat is potentially dangerous: only the physician can decide which cases are serious and which unimportant."

Antitoxin is always on hand and supplied free of charge. The number of smallpox cases was no doubt due to neglect in early reporting of the cases. The order of the Board, re innoculation of pupils attending school was carried out—about 400 being vaccinated, who had never been previously vaccinated, 18 cases in all were treated in the Isolation Hospital Pest House, the total days stay in the Isolation Hospital being 428 days. Frequent water analysis shows the town water bacteriologically pure after chlorine treatment, which is being continued with satisfactory results. Diagnostic outfits as supplied by the Provincial Board of Health have been supplied to the local physicians, and sera antitoxins, vaccines etc., are always kept on hand and supplied free of charge. The Isolation Hospital and equipment are in good condition, and the same arrangement as in former years with Victoria Hospital having been made, I would recommend its continuance.

A few complaints re nuisances have been investigated and remedied, and the Town dumps have been put under the supervision of an attendant.

Garbage collection and collection and disposal of night soil are still carried on with only fair results. Frequent recommendations re night soil disposal, and establishing of sewer connections, in order to do away with out door closets have been made to Council and it is to be regretted no positive action has been taken.

During the year there have been reported, 189 births, 80 deaths, and 63 marriages, compared with 185 births, 111 deaths, and 60 marriages, last year.

Numerous complaints re supply and distribution of milk made to the Board have been handed over to the Milk Inspector and no doubt have been disposed of. Although the expense of this official is charged up to the Board of Health, he apparently is not responsible to the Board. We are of the opinion that this work could be done at much less expense, and more efficiently and with better results by an inspector under the direct control of the Board of Health.

The sanitary conditions of the Town, and the Health of the Community are both satisfactory.

I wish to thank the Board, the Secretary and the Sanitary Inspector for valuable assistance and co-operation during the year.

JAS. J. MCCANN, M.D.
M.O.H.

SARNIA.

Jan. 24, 1922.

Mr. Chairman & Members,
Of the Board of Health,
Sarnia, Ontario.

Gentlemen:

I beg to submit my 4th Annual Report of the Health Department of the *City of Sarnia* for the year ending Dec. 31st, 1921. The census taken by the City Assessor last year showed the City of Sarnia to have a population of 14,905. The City Clerk's Register shows that we had 395 Births, 203 Deaths, and 182 Marriages. The percentage of deaths was 13.62 per thousand which was nearly 5 per thousand less than the previous year. We are pleased to report that we have had no epidemic such as we had two previous years of any importance outside of the usual cases of infectious and contagious diseases that any city is bound to have. The number of communicable diseases all told was 404 reported, consisting of venereal 75, diphtheria 53, scarlet fever 49, measles 186, typhoid fever 4, small-pox 4, tubercular 4, chicken-pox 16, itch 9, and Spanish influenza 4. These cases have been pretty well scattered throughout the City and we have not been able to trace the origin to any one particular source, and consequently are due to citizens not reporting mild cases and those having a tendency to infect children by carelessness from exposure.

Venereal Diseases

We beg to report that during the year more attention has been paid to the conduct of persons so infected with venereal disease. A number of such cases have been reported and they have been notified to place themselves under the care and treatment of a legally qualified medical practitioner and if unable to secure medical treatment they must apply to the Medical Officer of Health of their Municipality whose Medical Officer of Health will direct him or her as to how to obtain treatment, and that during this treatment they must attend and get such treatments until the Medical Practitioner certifies to their complete cure under a penalty of fine. During the year we had a visit from Dr. McClenahan, Director of Venereal Disease Division, Provincial Board of Health, who met a number of the Medical men of Sarnia in June last as to the advistbility of starting a Venereal Clinic here. Money was appropriated by the Federal Government for 3 years to be supplemented by the Provincial Government with an equal amount and distributed to each Province according to population. The Provincial Board of Health has taken advantage of this offer and have established a large number of Venereal Clinics in most of the Cities of Ontario and we thought it would be wise to discuss with the Director of Venereal Diseases. After some discussion we decided to have the City Physicians report all these cases in order to see if the number requiring treatment would indicate that such a clinic should be formed. This clinic was merely for those unable to pay for their treatments. Some 50 cases have been reported by a few physicians of which about one dozen were unable to pay as the cost was too expensive, and I feel satisfied that only a small percentage have been reported. The law provides that in such cases the Municipality must pay a reasonable charge for such cases and it might cost the Municipality several hundred dollars were we to strictly observe these cases and in order to prevent such I am of the opinion it would be more economical to have a clinic started here where those so infected and not able to pay could be given free treatments and make them healthy citizens and lessen the burden on the Municipality in later years.

Public School Nurse

The School Board still employs a school nurse whose duties are to visit the various schools and give her special attention to the health of the children attending schools and when any defects are found they are advised by a notice to their parents of such defects and we have found that her services are fully appreciated and many children when properly treated by their physician are made well and better results are shown by their advancement in school work. No epidemic of any importance has been shown during the year which I think is largely due to timely observance of a sick child in the school room. We have had no occasion to close any of the school rooms except for fumigation purposes.

Baby Welfare Clinic

Miss Menzies who was appointed by the Red Cross Society to supervise the clinic has devoted much time to this clinic which is held in the Public Library every Thursday afternoon from two to five o'clock where the mothers bring their babies under two years of age to be weighed and given such advice as the Medical man in attendance may think fit. I must again report that the clinic has been a success from the time it opened. The first year of its organization shows that 150 babies were enrolled, and according to statistics only one death occurred among the babies so attending. The physicians have co-operated with me in taking this clinic when so called upon. The second year has shown an increased attendance and the mothers of the babies delight in the opportunity of bringing the babies to the clinic. The work has so increased that it is necessary to have additional help, so the Red Cross Society has appointed an assistant to Miss Menzies for the next three months and it may be necessary to have three physicians instead of two to assist at each clinic. We desire to thank the Public Library Trustees for the free use of the Library Auditorium for this clinic. The District Medical Officer has advised that co-operation of the work of the School Nurse and the Social District Nurse might be worked to better advantage by giving each nurse one half of the City so that their work could be more effectively performed. The Red Cross Society have paid all expenses in connection with the clinic up to the present time.

Sewerage

The City has now more than thirty-one miles of sewers which have connection with nearly every home in the City so that very few homes are unconnected with our sewerage system, such homes unconnected have their outside closets cleaned annually under the supervision of the Sanitary Inspector.

Water Supply

Our new water works at Point Edward is now giving us a supply of water equal to any water supply in Canada, and we have a plant able to supply us with all the water that is required. Samples of water are sent by the Sanitary Inspector regularly to the Institute of Public Health for analysis and their reports have been very satisfactory. The ice supply is obtained from two sources, Viz; (1) Artificial, (2) Obtained largely from the Bay, and very few complaints have been registered by customers from either source of supplly.

Garbage

The disposal of the garbage throughout the City has been taken care of by the City Council. All garbage that is capable of being burned is taken to the Incinerator and that which consists of ashes, bricks, cans, etc. is now being used to fill a hollow on the Athletic Field, and the old hollow on South Mitton Street has been filled and covered with suitable earth which removes the unsightly appearance of that part of the City.

Milk Supply

The milk supply to our citizens comes from two sources, viz; (1) Creamery (2) Dairymen. As in the past, careful attention has been given to the source of supply, viz; the producers. Every winter or early spring we have our Veterinary Surgeon visit these producers and inspect the cows, barns, yards, milking utensils, health of farm hands and methods of cooling the said milk and we find since the introduction of the questionnaire which I had made out three years ago a decided improvement in the quality of the milk. Several times a year our Sanitary Inspector obtains samples of milk from the dairymen and creamery. By testing for dirt, etc. and the bacteriological test for the Institute of Public Health, a very decided improvement has resulted. Nothing has yet been done towards a medical examination of all those who are handling the milk, viz., the dairymen and the drivers of the producing farm or at the Creamery. I hope to have introduced to our City Council an up to date milk by-law as the one now in force is obsolete.

Isolation Hospital

An Isolation Hospital is of urgent need as we have no place to take patients infected with communicable diseases and a City of this size should have even a small place for such cases. Last year at a meeting of the Trustee Board of the Hospital the chairman informed me that we could have either of the buildings in their possession for such purposes and this request has already been placed before the Board. As the Hospital is now City property it was necessary to get the present City Commission of the Hospital to grant this request. The communication was sent to the commission but was turned down for the present. The law provides that it is not necessary to submit a by-law for money to build an Isolation Hospital and that the City Counicl can make the grants. I think the Board of Health ought to make a requisition to the City Council to grant us one of the houses spoken of or give us the funds to build a small hospital for the present.

Recommendations

1. That immediate steps be taken by the City Council to provide a suitable building or erect a small Isolation Hospital which could be added to as the City requires increased accommodation for the care of infectious and contagious diseases.
2. That we request the City Council to co-operate with the Provincial Board of Health and establish a Venereal Clinic at the Sarnia General Hospital for the treatment of those citizens who are unable to pay for their treatments.

3. That a Veterinary Surgeon again be appointed to inspect all places where milk is procured and sold to dairymen and creamerys, and that permits be granted to those who comply with approval of Veterinary's inspection.

4. That the Public School Nurse be placed more under the supervision of the Board of Health so that better co-operation and better results may be obtained than under the present system.

(Sgd.) Wm. Logie, M.D., *M.O.H.*

DISBURSEMENTS

Board of Health, 1921.

1. *Medical Supplies.*—		
Provincial Board of Health	61.69	
Medical Supplies necessary for use with Fumigator	98.55	160.24
2. *Express, Telephone and Telegraph.*—		
Charges re Samples of Water sent for analysis	14.25	
Telephone for Inspector	28.75	43.00
3. *Repairs and Appliances.*—		
Generator	46.00	
Water Boxes	15.00	
Repairs to Fumigator	4.75	
Repairs to Bicycle	6.25	72.00
4. *Salaries and Pay Lists.*—		
Wm. Logie, M.D., M.O.H.	600.00	
W. H. Haney,	250.00	
A. Crosbie	1,500.00	2,350.00
For Inspector Crosbie—Suit	65.00	
5. *Uniforms.*—		
For Inspector Crosbie—Suit	65.00	
—Cap	3.50	
—Shortening Overcoat	1.00	69.50
6. *Smallpox Epidemic.*—		
Rent and Supplies, etc.	81.38	
Dr. Logie—Services.	97.05	178.43
7. *Stationery and Printing.*—		
Stationery	30.19	
Printing	11.75	
Distributing Bills	10.75	
City Directory	4.00	
Lettering Office	1.50	
Tacks	.70	58.89
		$2,932.06

M. D. Stewart,
Secy. L. B. of H.
Sarnia, Ontario, March 16, 1922.

REPORT OF PUBLIC HEALTH NURSE FOR YEAR ENDING NOVEMBER 15th, 1921

Date	Miscellaneous	Infant Welfare	Tubercular	Child Welfare	Mother's meetings	Sickness	Prenatal	Inspections	Operatons	Relief	Well Baby Clinic	Total
1920												
November 16th-30th	12	38	2	2	2	4	3	....	....	....	....	63
December	45	71	4	5	5	10	2	13	....	....	....	155
1921												
January	16	65	2	....	2	16	....	....	3	82	....	186
February	16	52	10	9	1	32	....	7	....	48	....	175
March	24	77	2	9	1	19	13	....	....	30	1	176
April	28	87	7	14	4	7	8	....	....	13	5	173
May	32	122	6	7	2	5	5	....	....	13	5	197
June	24	122	4	12	3	2	....	....	....	22	4	193
July	25	118	2	9	....	13	3	....	....	12	4	186
August	29	108	5	14	3	20	5	....	....	12	5	201
September	14	42	3	4	1	4	2	....	....	8	3	81
October	18	110	3	9	2	2	2	....	....	13	4	163
November, 1st-15th	11	34	....	....	....	4	1	....	....	9	2	61
Totals	294	1,046	50	94	26	138	44	20	3	262	33	2,010

SAULT STE. MARIE.

To the Mayor and Alderman, of the City of Sault Ste. Marie, Ontario.

GENTLEMEN:—

I have the honour to submit for your consideration my report of the sanitary condition of the City of Sault Ste. Marie for the year 1921.

VITAL STATISTICS.

Estimated population	22,039
Births to date	717
Deaths to date	296
Marriages	236

INFECTIOUS DISEASES.

Smallpox.—We had an epidemic of this disease during the early months of the year. We had 174 cases of the disease. There were no deaths. Thirty-four cases were taken care of in the Isolation Hospital. During the year I did almost eleven hundred free vaccinations.

Scarlet fever.—This disease has been epidemic during the past two months. One hundred and twenty six cases have been reported and there have been three deaths. The epidemic is now almost over.

Diphtheria.—This disease has also been epidemic during the past two months. One hundred and twenty three cases have been reported. There were five deaths.

Measles.—Sixty seven cases. One death.

Typhoid fever.—Three cases. No deaths.

Venereal diseases.—Syphilis, four cases; Gonorrhoea, ten cases.

Tuberculosis.—This is still the most fatal of the communicable diseases. There were fourteen deaths from all forms of this disease.

Chicken pox.—Three cases. No deaths

DAIRIES AND MILK SUPPLY.

The dairies supplying milk to the city were inspected by the members of the Board of Health. Two vendors were shut off on account of unsanitary premises. In other cases changes in stabling arrangement were asked for in order to insure more cleanly handling of the milk.

BOARDING HOUSES, HOTELS AND RESTAURANTS.

These places have been regularly inspected and all have been kept in good condition during the year.

BUTCHER SHOPS AND MEAT SUPPLY.

The butcher shops were inspected regularly by the sanitary inspector. The meat supplied to the public has been of a good and wholesome quality.

NUISANCES.

These were always immediately abated. The efficient manner in which the garbage collection was carried on by the City Engineer's Department kept the city cleaner this year than it has been for a good many years.

THE MARKET.

The market has been freely used by the farmers and other and has been well patronized by the public. The food and produce offered for sale has been of goo quality and carefully handled.

THE PUBLIC HEALTH LABORATORY.

By the courtesy of Dr. N. F. W. Graham, Director of the Public Health laboratory, I attach as part of my report a summary of the work done at the Laborator during the past twelve months.

DIPHTHERIA	Swabs for diagnosis.	
	Positive	275
	Negative	986
		1261
	Swabs for release.	
	Positive	190
	Negative	250
		440
TUBERCULOSIS	Sputum for examination	
	Positive	28
	Negative	100
		128
TYPHOID FEVER	Widal Test.	
	Positive	3
	Negative	7
		10
CEREBRO-SPINAL FLUID	Cerebro-spinal Meningitis	2
	Tuberculous Meningitis	4
		6
SYPHILIS	Colloidal gold test	2
	Wasserman	
	Positive	132
	Negative	188
		322
GONORRHOEA	Smear examinations.	
	Positive	61
	Negative	66
		127
MILK EXAMINATION	Fat content	207
	Bacteriological	458
	Adulterants	25
	Tuberculosis	50
WATER EXAMINATION	Bacteriological.	
	Plates cultured and counted	9500
	Chemical	250
MISCELLANEOUS ANALYSES	Blood.	
	Typing for transfusion	50
	Anaemia, etc.	20
	Urine	500
	Oil	25
	Beer	33
	Moonshine	25

During the past week the Laboratory has been able to discover for the Fish Hatchery that the cause of death of innumerable fish spawn is due to Hydra Fusca and this discovery may save millions of trout and white fish.

The Isolation Hospital.

Patients admitted—	Smallpox	34	cases.
	Diphtheria	10	”
	Scarlet Fever	2	”

Public Health Nurse.

Miss Miller made 2218 calls during the year and attended seventy-five baby clinics. She visits every home where a new baby arrives and assists and advises the mother in the care of the infant. She visits home where sickness exists and co-operates with the attending physician in the care of the sick. She is on the look out for defects in children of pre-school age. She attends the baby clinics twice a week. The infant mortality rate in the city is beginning to fall. An alarming loss of life in this city is the still born infant. Almost one third of the deaths in the city are infants one to two years of age and of those almost one quarter are still born infants. The causes of this mortality are ignorance of the young expectant mother, no prenatal care or advice and the absence of proper medical and nursing care at the time the child is born. During the coming year we will have one afternoon a month when expectant mothers may attend the baby clinic for advice. During the year at the baby clinics there was an enrollment of 430 babies with an attendance of over 1000 for all babies.

The duties of the Sanitary Inspector were faithfully performed.

The Board of Health was an active organization during the year. Mr. G. J. Saunders was Chairman of the Board and Mrs. Morgan and Mr. Drew were valuable members.

All of which is respectfully submitted.

A. S. McCaig.

Medical Officer of Health.

SIMCOE.

To the Chairman and Members of the Board of Health
for the town of Simcoe.

Gentlemen:

I beg to present the following report as Medical Officer of Health for the year 1921.

Communicable Diseases: **We had reported during the year—**

Small-pox	23 cases	0 deaths
Measles	23 "	0 "
Scarlet fever	5 "	0 "
Typhoid fever	2 "	0 "
Chicken pox	3 "	0 "
Diphtheria	2 "	0 "

Small-pox raged as a mild epidemic during the winter months. The Board found it necessary to order a general vaccination of all school children early in January, as vaccination had been somewhat neglected for some years, and all pupils attendng schools were required to present a vaccination certificate within a prescribed time, as one measure towards checking the present as well as future epidemics. This requirement was generally complied with and all school pupils presented themselves to the various physicians of the town, with but very few making any objection.

As the small-pox subsided in the late spring months, measles also prevailed in a mild epidemic form, and continued towards mid-summer. The Board adopted the placarding provision, a measure that in former years had not been rigidly adhered to. Considerable friction resulted, but not without good effect, as it proved that a few cases were not being reported which had a tendency to place the physicians that were performing this duty conscientiously, at a disadvantage as anyone could readily see. After the importance of prompt reporting of such cases was called to the attention of those responsible, no difficulty was experienced and all cases were regularly reported thereafter. With this possible exception it appears that all cases coming to the notice of our local physicians of this and all other contagious diseases have been promptly and regularly reported and much credit is due to the local physicians for this important duty performed. For this service there is no other "honorarium" than an all abiding faith of an intelligent populace in the honor of the medical profession to protect them in so far as this public duty can do so. It might be said too, that some families were shielding cases of measles in order to escape the quarantine regulations, but no cases were discovered in time to prove the disease positively.

Typhoid fever was again conspicuous by its absence, only two cases being reported, which is gratifying in view of this disease in former years being so prevalent. The continued use of a good water supply, the extension of sanitary sewers, and perhaps the most important, the fact that people generally are better informed as to the importance and necessity of observing the more essential points of sanitation.

We were fortunate in not having many cases, proportionately, of scarlet fever as the quarantine period of six weeks at least, is so long, tiresome, and in all cases expensive. It was necessary to supply some of these families with assistance in the way of food, as breadwinners were not able to continue their usual employment. There were eleven cases of venereal disease reported, which is undoubtedly a very low estimate of the actual number of cases that occurred.

It was necessary to disinfect those class-rooms in each of the three schools and the business college, where pupils had contracted, or been exposed to contagious disease.

Public Health Nurse. One of the newer measures adopted by all the large cities and many towns in Ontario for the further advancement of public health is the employment of a Public Health Nurse. . Dr. McClenahan, our District Health Officer, made a special visit to our Board to urge the appointment of such a nurse for Simcoe. Special training for public health work is required of these nurses, and their services are particularly valuable in Child Welfare Work and the conservation of infants' and children's lives to the State, by visiting the homes and advising mothers as to nursing, feeding, and general hygienic measures of the body, and domestic surroundings. They make pre-natal visits where possible, giving much valuable information to the expectant mother and follow up all cases of births registered with the Town Clerk and see that the infant is protected against want and negligence, thus saving many lives otherwise lost. They are also useful in visiting the schools and examining children there, for physical defects and disease. They assist in rounding up epidemics and aid in a multitude of ways the health officials, physicians and citizens at large. This matter was recommended by our Board and was passed on for the Town Council's consideration and until such time as some members of the Board of Education, councillors and more public spirited citizens could be advised of the nature of such work. The question of expense would be in the neighborhood of about $1200.00 per annum. Under such an appointment it would be possible to establish a clinic in some central place to which mothers could bring their babies and children for advice and instruction on matters relating to their health, the proper food to use and methods of preparing it. Advice also on the simpler domestic remedies to use of necessity for the preservation of health as well as the prevention of disease. There is a very wide field open for educating the masses in sanitary and hygenic instruction of even the most elementary kind, and despite the comparative improvement in the modern education noticed along these lines, it is still deplorable to witness the ignorance that exists, and no doubt the medical profession are most qualified to bear evidence of this condition by reason of the opportunity the physician has of observing the condition in the daily pursuit of his occupation. In the various towns and cities where these nurses have been established it has been possible to secure the services of some of the local physicians to devote an hour or so each week or month as the case may be, in attendance upon these clinics. Their services are given gratuitously as a public duty, in which the nurse is relieved of the more difficult caess.

Milk Supply:

The question of a pure milk supply has been one that has received a great deal of attention of late from public health officials, as well as interested citizens generally, and much popular discussion as to the best method of preparing this very important article of food for the public consumption has taken place at Medical Society meetings, Health Officers', and Child Welfare conventions, and also at public meetings held in many cities and towns throughout the country. At the recent International Child Welfare Conference held at London, England, and Brussels, Belgium, it was demonstrated in these conferences that the pasteurization of milk proves a strong factor in the reduction of infant mortality. The apostle of the movement for the pasteurization of milk. Nathan Strauss of New York, in his paper, declares that pasteurization of milk solves the problem of destroying all germs of disease which may be in milk, but does not impair its digestibility or nutritive quality. He claimed that milk intended for infant nutriment should be pasteurized as an absolutely essential precaution and that it was a piece of criminal neglect to feed young children on milk that had not been so treated. As this method of preparing milk for public consumption is being adopted in many municipalities and is being required by by-laws in many cities and towns, the citizens of Simcoe are fortunate in having their entire milk supply pasteurized, and the process subjected to periodical inspection. The system of bringing the milk to the required temperature of heat necessary for the destruction of germ life and cooling it again rapidly has been found regular, the bottles being properly cleaned and sterilized before filling and the employees careful in the matter of cleanliness upon each inspection.

The milk which is supplied from some fifteen dairy farms has been tested monthly for butter fat, and laboratory tests are made for bacteria and dirt found in samples. The standard of butter fat 3.02% has generally been found present with but two exceptions, and as these two were again found wanting in this regard it was found necessary to discontinue this supply. It was not supposed that watering the milk was accountable for the lack of butter fat, but that the grade of cattle in these dairies was accountable for the deficiency in this particular. Two of the farm dairies have had the tubercular test applied to their herds and the infected ones eliminated. The dairy farms supplying milk to The Simcoe Sanitary Dairy have been inspected. Some defects have been found in a few cases and remedied, but the majority were found in a very satisfactory sanitary condition with cement floors kept clean, walls whitewashed, and manure piles at a proper distance. Facilities for cooling the milk by running water, clean wash basins, towels and soap for the milkers were provided and well kept in some dairies.

General.

The annual spring-cleaning notices were distributed by the Sanitary Inspector in April, to each householder, warning the citizens generally of the more important sanitary duties for each, and especially at that season of the necessity of removing the winter's collection of garbage and debris before the warm and germ-developing season approached.

The water supply has been carefully watched and the various analyses submitted have proven its purity and freedom from bacilli at each test. The Provincial Laboratory has kept our Board supplied with fresh vaccines and antitoxins, free of charge, for the use of our physicians, as well as the usual aseptic containers and swabs for use in communicable diseases.

A resolution was passed at one of the Board meetings for the Town Council's consideration, "that all houses on streets having water and sewage be required to dispense with the outside closet and install the usual sanitary flush closet." No action was taken. A great many nuisances have been reported, and the Sanitary Inspector has been instructed in each case to have the nuisance abated.

Vital Statistics:—There were 88 births, 51 males and 37 females. In 1919, births numbered 70, of which 41 were males and 39 females. In 1920, births 88, 51 being males and 39 females. Statistics have shown that during the time of serious wars and sometime after, the male births have been relatively higher than the female. Some very vague, delicate and inexplicable natural force no doubt is accounting for the re-adjustment of this sex ratio, in consequence of the very serious reduction of the male population in the nations concerned in the conflict. Whether this force is accountable for the larger male birth-rate of our town during the last three years, may be a matter for conjecture. Philosophers and scientists no doubt have an explanation for this phenomenon to whom I will of necessity refer the question.

Deaths:—There were 58 deaths during the year recorded, pneumonia, still and premature births, apoplexy and senility being the principal causes. Cancer, tuberculosis, paralysis and peritonitis were next in frequency.

All of which is respectfully submitted.

J. C. C. Grasett, M.D.,
M.O.H.

Simcoe, Dec., 1921.

ST. CATHARINES.

St. Catharines, Ontario, November, 23rd, 1921.

Chairman and Members of Local Board of Health of the City of St. Catharines.
Gentlemen:—

I have the honor to present my Annual Report for the year ending October 31st, 1921. It is regretted that every Medical Officer of Health turns in a different kind of Report and it is hoped that after this year a regular form will be used so that the work in different cities may be compared.

Vital Statistics.

Estimated population	**20,961**
Death rate per thousand population (excluding still births and premature births)	**12.452**
Birth rate per thousand population (excluding still births and premature births)	**32.632**
Infant mortality rate (number of deaths under one year per thousand living births)	**71.42**

Meetings.

The Meetings of the Board have been fairly well attended, and have been regular each month.

Emergency ambulance.

Since my last annual report the new ambulance has been finished and has already done very valuable work. The service rendered by the St. Catharines Taxi Co., has been excellent and the drivers have responded to all calls in a very efficient manner.

The matter of emergency calls outside the City has been taken up with the various municipalities and we are now able to charge these places when the ambulance is used by them.

Milk.

There has been a regular inspection and test made each month of samples from each milk vendor. We have had very little dirty milk, and it is to be hoped that all dealers will keep up the good work. Any citizen receiving milk which looks dirty should report to the M.O.H. immediately. Every householder should have a small box with a tight cover sunk in the ground near the back door, so arranged that the driver can place the bottles of milk there. This will keep the milk cool in the summer and straw placed in the box will prevent freezing in winter. We can not expect our milk to keep well in hot weather if it has been sitting in the sun for an hour or so after it has been delivered to our door.

Flies.

Many fly proof receptacles were used this year for garbage, but there is still a great deal of room for improvement, and early next spring we should endeavour to make every householder comply with the City by-law.

Water supply.

The City's water supply has been uniformly good according to bacteriological reports received. Although there were thirteen cases of Typhoid fever reported none contracted the disease in this City.

Meat.

It would appear that the only way to avoid numerous complaints about meat would be to have a meat inspector appointed. Much of the meat sold in this City is not inspected at all, and some of the slaughter-houses in the surrounding district are in a filthy condition.

Animals on premises.

In order that there should be a proper inspection of all stables it would be necessary for the City Council to pass a By-law requiring that all cows and horses be registered.

Pigs should not be allowed inside the City at all.

Contagious diseases.

During the year the following cases of infectious diseases were reported.

Influenza	**1**	**case**	**1**	**death**
Chickenpox	**28**	**cases**	**0**	**deaths**
Diphtheria	101	"	6	"
Measles	9	"	0	"
Mumps	2	"	0	"
Smallpox	1	"	0	"
Tuberculosis	35	"	19	"
Typhoid Fever	13	"	0	"
Whooping Cough	32	"	3	"
Venereal Diseases	110	"	0	"

Diphtheria.

Some of the cases of this disease were of a very virulent type and our death rate was fairly high. Most of the fatal cases however, were not seen by a physician for some days after the illness started. The medical men here, with one or two exceptions give large doses of antitoxin and on account of this our per cent. of deaths is much lower than in most other cities. At the Isolation Hospital the routine is to give not less than 10,000 units of Antitoxin on admission unless the attending physician states otherwise. Thirty-five cases of this disease were treated in the Institution with one death, and sixty-six cases were treated at home with five deaths.

The one case which proved fatal in the hospital had been ill one week prior to admission and had not been seen by a physician.

Typhoid fever.

Every case of Typhoid was investigated and it was found that the disease had been contracted outside of the city.

Scarlet fever.

There were many cases of this disease and unfortunately we are still getting some. Many of them are so mild that a physician is not called. I have asked the physicians to placard on suspicion any sore throat and fever, if there is vomiting. If no further symptoms develop the placard will be removed at the end of three weeks.

Venereal disease.

There has been far more co-operation in reporting these diseases this year, but there are still some physicians who have not reported a single case. Owing to the prevalence of them one can only draw conclusions that the physicians are not reporting all the cases seen.

The following have been reported:—

Syphilis	42 cases
Gonorrhoea	65 "
Chancroid	3 "

Many persons suffering from these diseases are unable to pay for treatment and it is proposed to open a free clinic in this city the first week in January. This will be in charge of a local physician and a nurse will also be appointed. The Provincial Board of Health make substantial grants to a municipality where there is a free clinic.

Isolation hospital.

The following cases were treated during the past year:—

Diphtheria	35 Cases	1 Death
Erysipelas	1 "	0 "
Measles	1 "	0 "
Scarlet Fever	37 "	0 "
Smallpox	1 "	0 "
Total	75	1

I would again call your attention to the inadequate size of this building During the past year we had to open a convalescent hospital ,for our Scarlet Fever patients.

The matron has done her work faithfully, and the hospital is kept in excellent condition.

During the year much labor saving electrical apparatus was installed which has made the work there much easier.

It would appear that the fees at this institution might be reduced both for city and outside cases.

Child welfare.

A Well Baby Clinic was started this year and has done very fine work. The object is to keep the well baby well, and the following report shows how much it is appreciated.

Total Attendance	653
Total Registered	173
Visited Clinic once	82
Visited Clinic twice	28
Visited Clinic more often	63

Of the eighty-two babies who came once, only seventeen had defects and these were visited after by the nurse at home.

The Public Health Nurse has devoted considerable of her time to the visiting in connection with the clinic, but much of her time is taken up going from one part of the city to another.

I would strongly advise that a motor car be considered in this year's estimates. This car could be used by the Health Nurse and Sanitary Inspector and would be of great service to them.

Garbage disposal.

During the year I have inspected the dumps used by the City, and generally speaking have found them in good condition, and care has been exercised to prevent any menace to health being caused therefrom. In particular the dump at Lock four was well covered with ashes last Spring, when the City dumping ceased and little or no danger to health could be caused there.

Recent inspection however shows that dumping has again commenced and complaints have been received as to its condition. While dumping is taking place the appearance is unsightly and some special care should be taken to prevent papers etc., from being scattered by the wind, and instructions should be given to this effect .

At the same time unauthorized dumping seems to be taking place and as may be expected no care is taken by persons so doing to prevent any nuisance arising. I would urge therefore that the City authorities prevent this. As far as Lock Four dump is concerned I would advise that before spring this be faced up with ashes and earth so as to present a neat appearance and that no more dumping take place here.

In view of the steady growth of this city and its present population I would strongly recommend that the Council take into consideration the establishment of a garbage disposal plant. We never will have a flyless town as long as we use dumps for our garbage.

Sewers.

During the year 2.3 miles of sewers were put down and 160 house connections put in. There are still some streets which should be sewered, especially the Thorold Road and Streets leading from it.

Factory ventilation.

We have received complaints about the ventilation and mode of heating some of the factories. One factory was heated with open coke fires, but the manager has assured me this practice would cease. The health of the workers should be the first consideration of the manufacturer.

Laboratory.

At present there is equipment at the G. and M. Hospital to do ordinary microscopic work, including the examination of throat swabs, but this distict should have a far better equipped laboratory and I would ask your Board to take up this matter with the Provincial Board of Health.

At the same time the matter of a course for the Sanitary Inspector should be considered.

Inspection of schools.

During the year I inspected all the Public Schools in the city as ordered by the Provincial Board of Health. A detailed report is being prepared and will be available at our next regular meeting, and a copy will be sent to the Board of Education.

Most of the schools were in excellent condition, clean and tidy, but they were nearly all over crowded.

In none of the school's were both soap and sanitary towels provided for the use of pupils—and in several schools neither of these useful articles were on hand.

Office.

Without a separate office it is impossible for the Board of Health work to be done efficiently. This matter should receive your consideration.

If files and statistics are to be kept correctly a proper place should be provided.

All of which is respectfully submitted.

D. V. Currey,
Medical Officer of Health.

To the Chairman and Members of the local Board of Health of the City of St. Catharines.

Gentlemen:—

I herewith submit my Annual Report from November 15th, 1920 to November 15th, 1921 inclusive.

Attached to this Report is a list of all deaths and their causes during the year, also a summary of their ages at the time of death.

I also submit a list of diseases classes as contagious as reported by the Medical Practitioners of the City numbering 561 cases and 31 deaths, from the several diseases.

The population as returned by the Assessment Commissioner for 1921 is 20,961 an increase of 1101 over 1920.

The Sewer System of the City has been enlarged and the Trunk Sewer completed and the City now has a good sewerage system in nearly every portion of the City.

The garbage collection is working satisfactory, tons of garbage and refuse being taken from the City daily.

All of which is respectfully submitted.

J. Albert Pay.
Secretary local Board of Health.

Births reported from November 15th, 1920 to November 15th, 1921.

Births Reported from November 15th, 1920, to November 15th, 1921.

Males	Females	Total
365	349	714

Decrease of eleven less than 1920.

Marriages 260 being 35 less than 1920.

Deaths 317 being 17 less than 1920.

Deducting stillborn and premature the death rate is 12.452.

Death rate being 15.123 per 1000 of total deaths.

CONTAGIOUS DISEASES REPORTED.

	Cases	Deaths
Scarlet Fever	229	2
Diphtheria	101	6
Typhoid Fever	13	0
Chickenpox	28	0
Mumps	2	0
Whooping Cough	32	3
Tuberculosis	35	19
Measles	9	0
Smallpox	1	0
Influenza	1	1
Venereal Diseases	110	0
	561	31

NUMBER OF DEATHS AND CAUSES, FROM NOVEMBER 15th, 1920, TO NOVEMBER 15th, 1921.

Scarlet Fever	2
Whooping Cough	3
Diphtheria	6
Influenza	1
Septicaemia	7
Tuberculosis Lungs	19
Tubercular Meningitis	40
Cancer Stomach	11
“ Liver	1
“ Pancreas	1
“ Intestines	4
“ Uterus	2
“ Breast	4
“ Face	1
“ Neck	1
“ Throat	1
“ Prostate	2
Ovarian Tumor	1
Arthrites	1
Diabetes	4
Anaemia	2
Alcoholism	3
Meningitis	4
Myelitis-transerse	1
Apoplexy	12
General Paralysis	1
Insanity Acute	1
Convulsions Infant	4
Pericarditis	1
Acute Endocarditis	1
Organic Heart Disease	11
Chronic Valvular “	6
Myocarditis	9
Fatty degeneration	1
Angina Pectoris	2
Arterio Sclerosis	7
Laryngitis	1
Bronchitis Acute	3
“ Chronic	5
Pneumonia Broncho	10
“ Lobar	1
Pneumothorax	1
Ulcer Stomach	1
Indigestion Acute	1
“ Chronic	1

Diarrhoea Enteritis under two years	6
Diarrhoea Enteritis two years and over	2
Appendicitis	3
Intestinal Indigestion	1
Colitis	1
Cholera Infantum	1
Cirrhosis Liver	3
Jaundice	1
Biliary Colic	1
Acute Cholecystitis	2
Peritonitis Simple	1
“ Tubercular	1
Recto-Vaginal Fistula	1
Acute Nephritis	1
Brights Disease	6
Pyelitis	1
Prostate Hypertrophy	2
Puerperal Toxaemia	2
“ Abortion	1
Difficult Labor	2
Pernicious Vomiting	1
Acute Abscess Axilla	1
Congenital Malformation	2
Spina Bifida	2
Permature Birth	25
Icterus Neonatorim	1
Melaena “	1
Malnutrition	5
Injury by Forceps Birth	1
Senility	14
Accidental Poisoning	1
Accidental Drowning	2
Accidental Firearms	1
Accidental by Tack	1
Accidental by Fall	4
Accidental by Railway	1
“ by Trolley	4
Accidental by Sunstroke	2
Accidental by Electricity	1
Unknown	4
Still Births	25
Total	317

AGES AT THE TIME OF DEATH.

Still born	25
Premature Births	31
From Births to 6 Months	37
" 6 months to 1 year	10
" 1 year to 2 years	5
" 2 years to 5 years	7
" 5 years to 10 years	8
" 10 years to 15 years	10
" 15 years to 20 years	9
" 20 years to 25 years	10
" 25 years to 30 years	10
" 30 years to 35 years	5
" 35 years to 40 years	6
" 40 years to 45 years	8
" 45 years to 50 years	8
" 50 years to 55 years	15
" 55 years to 60 years	13
" 60 years to 65 years	14
" 65 years to 70 years	18
" 70 years to 75 years	22
" 75 years to 80 years	21
" 80 years to 85 years	12
" 85 years to 90 years	6
" 90 years to 95 years	7
	317

STRATFORD.

To the Chairman and Members, of the Local Board of Health.

GENTLEMEN:—

It is my duty and pleasure to again submit to you my report on the sanitary condition of the city during the past year, such duty is in accordance with the Provincial Medical Act.

I find there were registered with the City clerk, 506 births, 198 marriages and 267 deaths.

We have had on the whole a very satisfactory report of communicable diseases, the total number being seventy-four with seven deaths, a very good record. Scarlet fever leads, there being thirty-three cases with two deaths. Diphtheria takes second place with twenty-three cases and one death. Spinal meningitis five cases with one death. Consumption three cases with three deaths. The number of premature or still births is very large, there being twenty-five cases reported. I find of the deaths recorded there were thirty-one who had reached the three score and ten the termination of their lives being reported from various causes.

Your Board is be congratulated upon the attendance of the members at the regular and special meetings.

Our city has now arrived at the size where it is necessary to make provision for the care and treatment of those afflicted with contagious disease. This has given the Board a great deal of thought and consideration during the past year and it is to be hoped that the ratepayers will show their appreciation of your efforts by voting for the by-law which you are submitting to them to raise the necessary funds for the erection of this much needed institution.

We desire to thank all the different societies, organizations and personal assistance given in efforts to help mitigate disease. The clinic seems to be giving satisfaction as reports so far seem favorable.

Respectfully submitted.
(Sgd.) J. A. ROBERTSON,
Medical Officer of Health.

To the Chairman and Members, of the Local Board of Health.

GENTLEMEN:—

In presenting my annual report, I am greatly pleased to be able to state that we are still making progress in the better sanitation of the City. We have, I believe, the cleanest, most sanitary and beautiful city in Ontario. We must give credit to the Park Board for the great improvements they have made from year to year in making sanitary and beautifying every nook and corner of their somewhat extended park system; and I am sure their efforts are appreciated by the citizens of Stratford.

The Horticultural Society are also deserving of praise for the part they have taken in making our burg a "City beautiful" by locating flower beds in so many places. Last year I drew the attention of the Board to the fact that in some of the residential parts of the City there were ancient stables standing quite close to the street. Some of these are still with us and are both unsightly and unsanitary and ought to be removed, and would suggest that some action be taken to remove the nuisance.

Our garbage collection is proving a boon to the City in bettering sanitary conditions, but in order that this scheme may be perfect, all householders must help in the work by providing suitable receptacles with tight fitting covers for the garbage, and also proper cans for ashes. The Incinerator is giving good satisfaction, but I would suggest that householders have all garbage as dry as possible with the liquid matter drained off, and the remainder wrapped in paper before depositing in can.

I have inspected streets, yards and lanes many times during the year and find that most people are interested in keeping their yards clean; yet there are some who do throw refuse into yards. The abolition of many outside closets has added greatly to the appearance and sanitation of the City. There have been eighty houses modernized this year, but the high cost of materials etc. has prevented many from complying with by-law.

I inspected the laundries, bake shops, butcher shops, slaughter houses, restaurants, and all places where human food is handled. I inspected junk yards, dumping grounds and every part of the City many times during the year. I had removed off the streets several dogs that had been killed by motor cars, etc., collected samples of milk and tested same, and found it up to the standard. Inspected the dairies and found them well kept. I took samples of water from several taps in different parts of the City and had them sent to Provincial Analyst; same being reported as pure. I disinfected ninety-seven houses where contagious diseases existed, and took every precaution to prevent the spread of disease by carrying out the rules and regulations of the Provincial Board of Health.

Gentlemen, hoping this report will meet with your approval, I have the honour to be,

Your obedient servant,
(Sgd.) THOS. DUNSEITH,
Sanitary Inspector.

ST. THOMAS.

DR. JOHN W. S. MCCULLOUGH,
Chief Provincial Health Officer,
Toronto, Ontario.

DEAR SIR:—

The following is a report of the Medical Officer of Health for the year ending December 31st., 1921.

The year 1921 was an uneventful year in Health work in St. Thomas with these exceptions.

1st., The construction of a large dam on Kettle Creek making an artificial lake covering about 30 acres to increase the water supply for the City and its suburbs.

2nd. The establishment of a Baby Clinic.

3rd.. A severe epidemic of Smallpox.

This City has for about 30 years had their supply of water from Kettle Creek. A large storage basin had been constructed with capacity of about 8000000 gallons and this augmented when necessary by water from the stream which was kept in reserve by a dam.

This water which was chlorinated, oxygenated and coagulated formed an adequate supply until the present, but owing to increased demand for water in newer parts of the City and from the suburbs the water commissioners with a wise foresight looked into the most practical plans for increasing this supply.

Plans were considered to bring the water from Lake Erie, a distance of about 10 miles or of erecting a dam further up Kettle Creek at an advantageous site.

After considerable deliberation on the part of the commissioners and with expert advice, it was decided to adopt the latter plan.

A very strong dam was erected at the site selected and St. Thomas has now an abundant clean pure water supply, capable it is estimated of supplying a City of 50,000 population.

Mr. A. F. McLachlin F.C.I.C., a competent and trained analyst makes frequent analyses of the water.

A Baby Clinic was opened here on March 31st., 1921, and was held every Thursday afternoon throughout the year.

The average attendance was 215 with 430 babies on the register, 119 cases were referred to their own doctors for treatment.

Four deaths occurred during the year among the number that were registered.

Miss Riddell P.H.N. is deserving of great credit for the valuable services she rendered in establishing the Clinic.

Miss Cameron P.H.N. was engaged by the Board of Health for the last three months of the year and did a good work which was much appreciated by the Board.

The Red Cross organization of this City did all the voluntary work and certainly are deserving of the highest praise for the unselfish and earnest efforts put forth by them which made the Clinic such a great success throughout the year.

Owing to errors in diagnosis and to unreported mild cases, a very severe epidemic of Small-pox began during the latter part of December 1920 and January, 1921 and continued until the latter part of March 1921. After compulsory vaccination of the children in the Public Schools and students of the Collegiate Institute had bee instituted, the epidemic subsided rapidly.

Some lessons to be learned from this epidemic to my mind are the following:—

The great value of vaccination is once more proven. There were over 70 cases treated in the Isolation Hospital here, none were vaccinated.

Physicians should endeavour to have all babies under their charge vaccinated at 3 months of age. They should be re-vaccinated at school age again.

Chicken-pox should be quarantined and placarded.

Analyses of all the milk supplied to the City were made 4 times during the year besides individual analyses made many times, as circumstances indicated.

The dairies and herds were inspected twice during the year by the Sanitary Inspector and Dr. Ball, Veterinarian.

Great improvement is being shown in the quality and cleanliness of the milk supplied to the City.

About ⅓ of the milk supply is pasteurized.

Cases of Small-Pox, Scarlet Fever, Diphtheria, Measles reported to me for 1921.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Small-pox:													
Cases	35	43	25	11	1	1	0	0	0	0	0	1	117
Deaths	No deaths throughout the year.												
Diphtheria:													
Cases	27	18	22	18	15	16	13	12	31	10	10	..	192
Deaths	2	2	1	0	0	1	0	1	0	1	0	..	8
Scarlet Fever:													
Cases	7	10	2	2	2	5	1	7	2	5	..	..	43
Deaths	No deaths throughout the year.												
Measles:													
Cases	95	33	2	0	0	0	0	1	0	0	..	..	131
Deaths	0	1	0	0	0	0	0	0	0	0	..	..	1

Yours truly,

DR. McKILLOP, M.O.H.
Per M.E.L.

SUDBURY

To the Chairman and Members of the Board of Health,
Town of Sudbury, Ontario.

GENTLEMEN:—

We have the honour to submit to you the report of sanitary work done under your Board from November 30th, 1920 to November 30th, 1921.

The total number of loads of garbage and other waste delivered at the Incinerator and destroyed were as follows:

Garbage and other waste 3269 loads, 21 Horses, 26 Dogs, 4 Cows, 1 Calf, 3 Lambs, 7 Pigs, 7 cases Eggs, 1150 lbs. Beef, 23 Boxes Sausage, 2½ bbls. Pork, 750 lbs. Fish.

These figures show a considerable increase on the previous year, garbage alone showing an increase of 771 loads.

The incinerator fire-box is, and has been for some time, in need of repairs but the work has been held up in the hope that a large incinerator, which is badly needed, would be installed. The present incinerator will not handle the refuse next year if the increase continues.

The garbage contract has been handled in a very efficient manner and complaints have been very few and in all cases have been enquired into and remedied the day they were received.

Plumbing permits.

One hundred and two permits were issued during this period. Thirty-two of these were for repairs, alterations and additions, the remainder being for new connections to the sewer. All of this work was inspected and passed when satisfactorily completed.

Water.

Sixty-one samples were collected and forwarded to Toronto and North Bay during this period. During the months of August and September the supply was not satisfactory. More chlorine was added, however, and at present the supply is satisfactory. In addition to the ordinary samples, we have forwarded some seventy-five daily samples to the Experimental Laboratories at Toronto, but the reports on these have not yet been received.

Milk supply.

One hundred and three samples of milk have been collected and tested. The dairymen are using every effort to supply good milk and to keep up an adequate supply. There is no danger of a milk shortage during the coming winter as the Creighton supply has been secured by our dairymen. Dairies have been regularly inspected, and improvements suggested, particularly in one case, were quickly carried out. The average percentage of butter fat was 3.62, so that the quality of our milk is well over the standard required by law.

Infectious Diseases.

There were twenty-eight cases of smallpox, six cases of scarlet fever and sixty-seven cases of diphtheria reported during this period. In all cases quarantine regulations were enforced and the premises fumigated on completion of quarantine period. There were ten deaths from diptheria. Four cases of smallpox and one of diphtheria were placed in the Isolation Hospital which, by the way, has been closed since June 29th. We wish to point out that the need of an efficient Isolation Hospital is very great, as there is no means at present of coping with an epidemic should one arise. During the year one hundred and eighty-two cases of venereal disease have been reported to the Medical Health Officer.

The night soil contract has been well carried out and complaints have been very few. This has been one of the greatest difficulties facing this department in previous years. The new wagon purchased last spring has been the greatest factor in this improvement, as has been the bi-monthly collection.

Collections for the year were:

Amount paid to Contractor:—			
1002 @ 60c.			$ 601.20
5049 @ 70c.			3,534.30
13 Camps @ $1.00			13.00
			$4,148.50
By Cash Collected		$3,010.30	
Cash to Town:—			
1002 @ 70c.	$ 100.20		
5049 @ 20c.	1,009.80		
		1,110.00	
			4,120.30
Outstanding			$ 28.20

Food has been well handled on the whole. There is still room for a little improvement in the wrapping of meat, particularly that which comes from the farmers in the district. Every effort is being made to get in touch with them and urge the necessity of better wrapping.

The regular inspection of Lodging houses, abattoirs, restaurants and all stores handling food of any kind, has been carried out.

The Town has been regularly inspected during the year and all complaints have been investigated properly and rectified wherever possible.

We wish to thank the Town Council, the Board of Health and the general public for the help and courtesy given us in the execution of our duties.

All of which is respectfully submitted.

W. J. Cook,
Medical Officer of Health.

F. Rotheny,
Sanitary Inspector.

WELLAND.

WELLAND, ONT., January, 1922.

DR. MCCULLOUGH,
Prov. Board of Health,
Toronto, Ont.

Dear Sir:

I beg leave to submit my annual report for the year 1921.

I am pleased to state that the city has been comparatively free from any serious epidemic of disease, and that there has been on the whole less sickness than usual during the year. There have been a few cases of typhoid fever, four having been reported to me, with no deaths. This is no doubt due to the fact that the canal water always shows colon bacilli, and is so frequently muddy that it is difficult to make it absolutely safe by chlorination. Until we have a supply of clean water, an occasional case of typhoid will be unavoidable in spite of chlorination. The dirty condition of our water is one of the worst features of the City, as nothing is so essential to the health of the people as an abundant supply of pure clean water for drinking purposes. Every effort should be made by the Municipality to have the proposed pipe line built by the Government, so that this defect may be remedied.

Twenty-two cases of diphtheria have been reported during the year with three deaths. Six of these were in the month of January, the others occuring during various months. There were 10 of scarlet fever, the majority of them mild and no deaths from this disease occurred. This disease has been very prevalent throughout the Province and we have been fortunate to have so few cases. A widespread epidemic of whooping-cough occurred during the summer and one death resulted.

109 deaths were recorded for the year, 31 of these occurring at the Hospital, of which many were from outside the city limits. This gives a death-rate of 12.3 which is somewhat below the average. This number does not include the stillbirths of which 13 were reported.

The sanitary condition of the city is on the whole very satisfactory, and the instances of complaints of public nuisances are steadily growing less frequent. One of the greatest difficulties encountered by the Sanitary Inspector is in the enforcement of the law regarding manure heaps. Many people will not go to the trouble and small expense necessary to protect the manure from flies.

The Inspector has visited all dairies during the year and reports that there is a steady improvement in conditions and a willingness to conform to the by-law. The milk supply, with the exception of one dealer, is all pasteurized, and thus rendered safe from tubercular and other disease germs. It is becoming increasingly more difficult to keep the butter-fat up to the requirements of the by-law, due to the fact that cows are being bred rather for quantity than quality of milk.

The vital statistics for the past three years have shown that our death rate among children under one year has been very high, and I determined early in the year to make an effort to inaugurate child welfare work and Public Health Nursing. I applied to the Provincial Board requesting them to send one of the District nurses to the city to inaugurate the work. Miss Hamilton arrived in April and at once began a campaign. At the same time I had two representatives from the Provincial Board visit the city, who addressed the Rotary Club and a

Public meeting, informing the citizens of the importance of the work, and creating an interest in the subject.

As a result of Miss Hamilton's splendid organizing abilities, the first baby clinic was held in the latter part of May with an attendance of about 40 babies, and proved an unqualified success. These clinics are known as well baby clinics, the object being to prevent them from becoming sick, by a weekly supervision by the nurse and physician to ascertain whether they are making the correct gain in weight, seeing that they are receiving the proper kind and amount of food and giving instructions as to their care, etc. Sick babies are not treated but are referred to their regular physicians.

Application was made to the Council for a grant to provide a Public Health Nurse, which they very generously made, and Miss Anna M. Oram was appointed, and took charge on the first of June. She has proved a most capable and efficient worker, as her report which I append will show. The attendance and interest in the weekly clinics has grown steadily, and from information I have received, I believe we have the most succesful baby clinic in the Province. A large amount of the credit of this must be given to Miss Oram, the different nurses in the City who have kindly assisted at the clinics, Doctors Boyd and Reive who have given their services each week free of charge, and lastly to the members of the various Home and School Clubs, who have so generously furnished tea and refreshments to the mothers attending the clinic.

It is a source of much gratification to be able to report that the death rate among children under one year, is just about one half of that for the past two years, and instead of a rate of 164 per 1000 births, this year the rate is 82 per 1000 births. There have been 22 deaths during the year, 4 of which were premature births. 267 births were reported for the year. While one cannot fairly claim that the reduction was entirely due to child welfare work, there is no doubt that it was an important factor, as only three deaths among the 180 babies on the clinic roll, occurred.

Report of Public Health Nurse.
Miss Anna M. Oram.

Report for seven months, June 1st to December 31st, 1921.
Number of visits made, 1429, a monthly average of 204.

Monthly average of pre-natal visits	180
Number of babies on clinic roll	180
Total attendance at Baby clinic	886
Weekly average attendance	31
Number of deaths of clinic babies	3

This work has been made possible by the excellent co-operation of the physicians and citizens of Welland and the splendid help given me by the various Home and School Clubs of the City.

Anna M. Oram.

I must express my gratitude to the members of the Board of Health for their interest and hearty co-operation in the work of the year.

All of which is respectfully submitted.
J. H. Howell, M.O.H.

March 21, 1922.

WOODSTOCK.

To the Chairman and Members, Board of Health, Woodstock, Ontario.

Gentlemen:—

Below please find report of the Medical Officer of Health for the year ending October 31st, 1921.

Population (Assessor's figures) 10,164.

Births registered (exclusive of Still Births) 214. Nineteen of which were non resident.

Deaths (exclusive of Still Births) were 142, fourteen of which were non-resident. This would give a death rate of 12.6 per thousand population.

DEATHS.

I. GENERAL DISEASES.

Anaemia, pernicious	5
Scarlet Fever	1
Influenza	1
Diabetes	1
Anaemia (Splenic)	1
Whooping Cough	2
Hyper Thyroidism	2
Tuberculosis-Lungs	1
Quinsy	1
	15

Carcinoma:—

Throat	1
Urinary Bladder	1
Forehead	1
Stomach	2
Mesenteric Glands	1
Breast	1
Colon	1
Prostate Gland	1
Uterus	1
Location not stated	1
	11

II. DISEASES OF THE NERVOUS SYSTEM.

Hemiplegia	6
Apoplexy	5
Cerebral Hemorrhage	3
Chronic Hysteria	1
	15

III. DISEASES OF THE CIRCULATORY SYSTEM.

Endocarditis	5
Acute Dilatation	3
Myocarditis	4
Chronic Valvular Disease	6
Angina Pectoris	1
Mitral Regurgitation	2
Adam's Stokes Heart Block	1
	22

IV. DISEASES OF THE RESPIRATORY SYSTEM.

Pneumonia	6
Oedema of Lungs	1
Chronic Bronchitis	2
	9

V. DISEASES OF THE DIGESTIVE SYSTEM.

Intestinal Obstruction	1
Cholelithiasis	1
Appendicitis	3
Cirrhosis of Liver	2
Gallstones	2
Colitis	1
Gastric Ulcer	2
Acute Indigestion	1
	13

VI. DISEASES OF GENITO URINARY SYSTEM.

Chronic Cystitis	1
Bright's Disease	1
Chronic Nephritis	3
	5

VII. DISEASES OF THE PUERPERAL STATE.

Septicaemia (childbirth)	1
Ectopic Gestation (septicaemia)	1
	2

VIII. DISEASES OF THE SKIN.

Gangrene of foot	2

IX. MALFORMATIONS.

Congenital Heart	2
Spina Bifida	1
Imperforate Anus	1
Acephalus	1
	5

X. DISEASES OF EARLY INFANCY.

Premature	7
Patent Foramen Ovale	1
Marasmus	1
Inanition	8
Malnutrition	1
Debility (infantile)	1
Mitral Regurgitation	1
Acute Indigestion	1
Strangulated Hernia	1
Meningitis	2
Gastro-enteritis	3
Asphyxia (unknown cause)	1
	28

XI. DISEASES OF OLD AGE.

Senile Decay	5
Debility, General	10
	15

XII. EXTERNAL CAUSES.

Accidental injury, being struck by a board from a circular saw	1
Accidental smothering in cot	1
Accidental injuries by caving in of trench	1

Murdered	1
Suicide by drowning	1
Hanging (legal)	1
Killed at railway crossing	1
Killed by automobile	1
Accidental injury to head	1
Accidental burns	1
	10

COMPARATIVE TABLE.

Showing Number of Deaths During 1921 Within the Following Age Points.

Still Births	7
Premature Births	7
Under one year	22
From 1 to 10 years	7
" 10 to 20 "	2
" 20 to 30 "	5
" 30 to 40 "	6
" 40 to 50 "	5
" 50 to 60 "	13
" 60 to 70 "	21
" 70 to 80 "	28
" 80 to 90 "	20
" 90 to 100 "	5
Over 100 years	1
	149

SUMMARY OF COMMUNICABLE DISEASES REPORTED FROM NOVEMBER 1920 TO OCTOBER 31st 1921

	1920		1921										
Diseases	November	December	January	February	March	April	May	June	July	August	September	October	Totals
Diptheria	1	1	4					3				1	10
Scarlet Fever	1	1	5	2	2						1		12
Typhoid Fever	1									1	4	4	10
Mumps	2		1	7	47	42	19	24	12	1			155
Tubercolosis		1	1										2
Smallpox			1		3	3							7
Measles										1		1	2
Erysipelas			1		1								2
Whooping Cough				12	11	4	2	5			1		35
Chickenpox							3	1	1				5
Encephalitis Lethargica								1					1
Totals	5	3	13	21	64	49	24	34	13	3	6	6	241

No severe epidemic of communicable diseases has occurred this year. though mumps in a mild form has been prevalent and although fairly well reported. still there were many cases not reported and I would again remind the general public that it is their duty to report promptly all cases of communicable disease.

The odd cases of small pox is a reminder that vaccination laws should be enforced. At present there are over 400 children attending our public schools who have never been vaccinated and I have so reported to the Board of Education.

Milk Supply.

The large percentage of our milk is now supplied by the Woodstock Dairy which has proper facilities for giving the public a pure wholesome product. The various sources of milk supply to the dairy were inspected and all found to be in good condition.

Meat Supply.

Our meat shops are invariably supplied with government inspected meat.

Most of the slaughter houses were found to be much below the standard set by the Provincial Board of Health.

Sanitation.

Much has been accomplished in improved sanitation by the completion of the South Trunk Sewer and the Sewage Aeration Tank which was officially put into operation May 24th, 1921.

Our sewage disposal plant where sewage is treated by the activated sludge system represents one of the first attempts in Canada to use this system on a large scale.

Some time after the plant was put in operation difficulties were encountered, necessary adjustments made and at the present time the activated sludge process is giving entire satisfaction.

During the year various districts have been supplied with sewers and I strongly advise the elimination of the outside closet where sewers are available.

I would again recommend that some efficient system of inspection of all plumbing be adopted.

The City's water supply though abundant is not above suspicion as to purity, and appropriate measures may have to be taken that will for all time ensure us of an absolutely safe water.

The various garbage dumps have come in for much adverse criticism. If garbage dumps are to be continued, effective means must be taken to keep them in proper condition, otherwise the construction of an incinerator is the only solution.

F. S. RUTTAN
Medical Officer of Health.

WOODSTOCK, ONTARIO.

November 15th, 1921.

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